

**Proceedings of the American Academy of Arts and Sciences.**

**VOL. 63. No. 12.—MARCH, 1929.**

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**RECORDS OF MEETINGS, 1927-1928.**

**BIOGRAPHICAL NOTICES.**

**OFFICERS AND COMMITTEES FOR 1928-1929.**

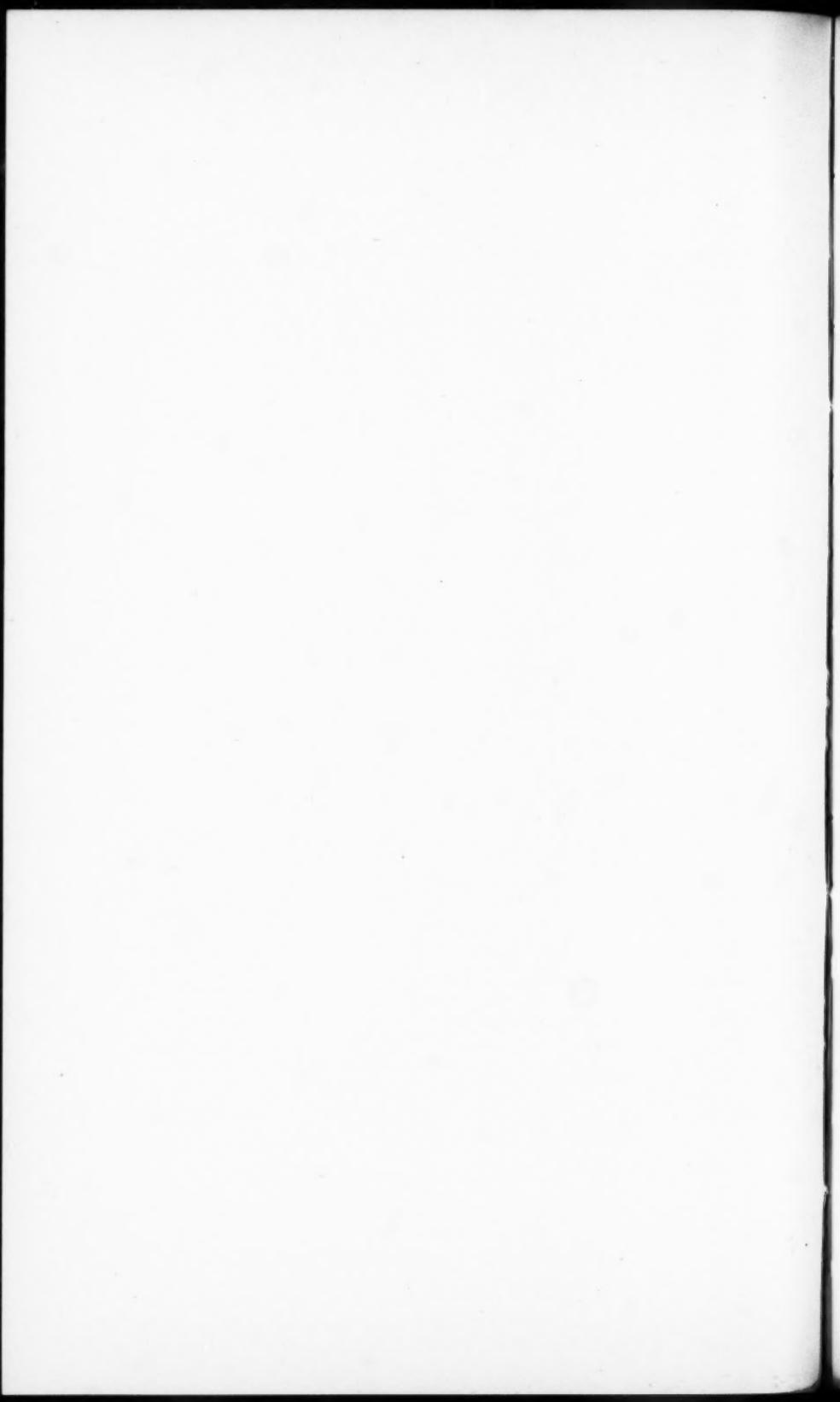
**LIST OF THE FELLOWS, ASSOCIATES, AND FOREIGN  
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## RECORDS OF MEETINGS

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One thousand one hundred and fifty-ninth meeting.

OCTOBER 19, 1927.—STATED MEETING.

The Academy met at its House at 8.15 P. M.

The PRESIDENT in the Chair.

There were present seventy-five Fellows and Associates, two Foreign Honorary Members, and nine guests.

The Records of the Annual Meeting, of May 11, were read and approved.

The following letters were presented by the Corresponding Secretary: from K. D. Blackfan, R. P. Blake, W. J. Crozier, Philip Drinker, G. M. Fair, W. C. Forbes, J. L. Gamble, Wallace Goodrich, H. M. Hall, A. N. Holcombe, E. A. Hooton, Charles Hopkinson, P. R. Howe, I. M. Johnston, A. V. Kidder, D. H. McLaughlin, J. H. Means, A. L. Melander, G. J. Peirce, F. H. Pratt, J. H. Pratt, E. A. Robinson, A. W. Rowe, George Sarton, A. W. Sellards, J. C. Slater, W. L. Sperry, H. T. Stetson, E. C. Tarbell, Langdon Warner, J. T. Wearn, R. S. Weston, W. W. Willoughby, and Quincy Wright, accepting Fellowship; from F. C. Burkitt, H. H. Dale, Peter Debye, Léon Duguit, Willem Einthoven, Ejnar Hertzsprung, Victor Laloux, Friedrich von Müller, Gilbert Murray, Henri Rabaud, Joseph Redlich, and Richard Wetstone, accepting Foreign Honorary Membership; from N. T. Kidder, accepting Associate Membership; and from W. H. P. Faunce, resigning Fellowship.

The Corresponding Secretary reported the receipt from Mr. William C. Lane of a notice issued for a meeting of the Council of the Academy on October 17, 1784.

He also announced that the following biographical notices had been received: of William Healey Dall, by G. H. Parker; James Furman Kemp, by B. K. Emerson; and Charles Doolittle Walcott, by Charles Schuchert.

The President announced the death of nine Fellows: Henry Laramore Abbot (Class I, Section 4), Thomas Willing Balch (Class III, Section 1), Bertram Borden Boltwood (Class I, Section 3), Francis

Tiffany Bowles (Class I, Section 4), James Kendall Hosmer (Class III, Section 4), Alexander Crombie Humphreys (Class I, Section 4), Charles Frederic Mabery (Class I, Section 3), Francis Weld Peabody (Class II, Section 4), Henry Paul Talbot (Class I, Section 3); of two Foreign Honorary Members: Svante August Arrhenius (Class I, Section 2), Willem Einthoven (Class II, Section 3); and of one Associate, Edwin Hale Abbot.

The newly elected Fellows and Associates were then presented.

The following communications were presented:

Mr. Edward M. East: "The World Population Congress at Geneva and the Fifth International Congress on Genetics at Berlin."

Mr. Willem J. Luyten: "Forty Seconds at Jokkmokk."

Sir Charles S. Sherrington: Some Remarks.

Two papers were presented by title:

"The Compressibility and Pressure Coefficient of Resistance of Eleven Elements," by P. W. Bridgman.

"The Viscosity of Mercury under Pressure," by P. W. Bridgman.

The meeting was dissolved at 9.55 P. M.

**One thousand one hundred and sixtieth meeting.**

NOVEMBER 9, 1927.—STATED MEETING.

The Academy met at its House at 8.15 P. M.

The PRESIDENT in the Chair.

There were present fifty-two Fellows and Associates and eight guests.

The Records of the meeting of October 19 were read and approved.

The President reported the death of two Fellows: Alfred Hemingway (Class III, Section 1) and John Collins Warren (Class II, Section 4).

The President announced that the next meeting on December 14 will be preceded by a subscription dinner.

The Rumford Medals were presented to Professor Arthur Holly Compton, of the University of Chicago, for his researches on Röntgen rays.

The following communication was presented:

Mr. Arthur Holly Compton: "X-Rays as a Branch of Optics."

The meeting was dissolved at 9.45 P. M.

**One thousand one hundred and sixty-first meeting.**

**DECEMBER 14, 1927.—STATED MEETING.**

The Academy met at its House at 8.15 P. M.

The **PRESIDENT** in the Chair.

There were present thirty-three Fellows and Associates and thirty guests, including ladies.

The meeting was preceded by a subscription dinner held in the Reading Room of the Academy. This was attended by thirty-two Fellows and Associates and thirty guests, including ladies.

The reading of the Records of the meeting of November 9 was suspended.

The President reported the death of two Fellows: Samuel McChord Crothers (Class III, Section 4) and Nathan Matthews (Class III, Section 1).

The following communications were presented:

Mr. Charles Burton Gulick: "A Cookery Book of the Second Century."

Mr. Willem J. Luyten: "Some Remarks on the Skjellerup Comet."

The meeting was dissolved at 9.30 P. M.

**One thousand one hundred and sixty-second meeting.**

**JANUARY 11, 1928.—STATED MEETING.**

The Academy met at its House at 8.15 P. M.

The **PRESIDENT** in the Chair.

In the absence of the Recording Secretary Vice-President Kennelly was requested to assume his duties.

There were present fifty-three Fellows and Associates and thirteen guests.

The Records of the meeting of December 14 were read and approved.

The Corresponding Secretary reported the receipt of a biographical notice of Francis Weld Peabody, by M. J. Rosenau.

The following communications were presented:

Dr. George R. Minot and (by invitation) Dr. William P. Murphy: "The Treatment of Pernicious Anemia."

Dr. William B. Castle: "The Effect of Liver Feeding on the Blood-forming Organs in Pernicious Anemia; Studies Commenced by Dr. Francis W. Peabody."

Dr. Edwin J. Cohn: "The Present Status of the Chemical Problems Raised by the Study of Pernicious Anemia."

The following papers were presented by title:

"Magnetostriction Oscillators Applied to the Production, Control, and Measurement of Audio and Radio Frequencies," by George W. Pierce.

"Magnetostriction Oscillators Applied to the Measurement of the Electric Constants of Metals and Alloys," by George W. Pierce.

"A Dynamic Study of Magnetostriction," by K. C. Black. Presented by George W. Pierce.

The meeting was dissolved at 9.45 P. M.

**One thousand one hundred and sixty-third meeting.**

**FEBRUARY 8, 1928.—STATED MEETING.**

The Academy met at its House at 8.15 P. M.

The **PRESIDENT** in the Chair.

There were present thirty-three Fellows and five guests.

The Records of the meeting of January 11 were read and approved.

The Corresponding Secretary reported the receipt of a biographical notice of Willem Einthoven, by W. B. Cannon.

He also announced that James Haughton Woods had been appointed delegate to represent the Academy at the International Congress of Orientalists at Oxford in August, 1928, and William Morton Wheeler its representative at the Fourth International Congress of Entomologists at Ithaca, August 12-18, 1928.

The President announced the death of three Fellows: John Spencer Bassett (Class III, Section 3), Archibald Cary Coolidge (Class III,

Section 3), George Washington Goethals (Class I, Section 4); and of one Foreign Honorary Member: Thomas Hardy (Class III, Section 4).

The following communications were presented:

Mr. Arthur E. Kennelly, Chairman Rumford Committee: "Recommendation for an Award of the Rumford Medal," with an Experimental Demonstration by Mr. William S. Franklin.

Mr. William Yandell Elliott: "The Principles of Political Science."

The meeting was dissolved at 9.55 P. M.

**One thousand one hundred and sixty-fourth meeting.**

**MARCH 14, 1928.—STATED MEETING.**

The Academy met at its House at 8.30 P. M.

The **PRESIDENT** in the Chair.

There were present thirty-six Fellows and Associates and three guests.

The Records of the meetings of February 8 and November 9, 1927, were read and approved.

On recommendation of the Council the following appropriations were made for the ensuing year:

From the income of the General Fund, \$7,700, to be used as follows:

for General and Meeting expenses.....	\$ 800
for Library expenses.....	2,000
for Books, Periodicals, and Binding.....	1,200
for House expenses.....	2,850
for Treasurer's expenses.....	850
	—
	\$7,700

From the income of the Publication Fund, \$5,091.93, to be used for publication.

From the income of the Rumford Fund, \$3,887.87, to be used as follows:

for Research . . . . .	\$1,000.00
for Books, Periodicals, and Binding . . . . .	200.00
for Publication . . . . .	600.00
for use at the discretion of the Committee . . . . .	2,087.87
	—————
	\$3,887.87

From the income of the C. M. Warren Fund, \$1,173.07, to be used at the discretion of the Committee.

The President reported the death of Hendrik Antoon Lorentz, Foreign Honorary Member in Class I, Section 2, and of Harris Hawthorne Wilder, Fellow in Class II, Section 3.

The President appointed the Nominating Committee as follows:

Arthur B. Lamb, of Class I  
James L. Gamble, of Class II  
John O. Sumner, of Class III

The following communication was presented:

Mr. L. Denis Peterkin: "The New Novel."

The meeting was dissolved at ten o'clock.

**One thousand one hundred and sixty-fifth meeting.**

APRIL 11, 1928.—STATED MEETING.

The Academy met at its House at 8.15 P. M.

The PRESIDENT in the Chair.

There were present twenty-nine Fellows and five guests.

In the absence of the Recording Secretary, the Corresponding Secretary was requested to assume his duties.

The Records of the meeting of March 14 were read and approved.

The President announced the death of two Fellows: Gaetano Lanza (Class I, Section 4) and Theodore William Richards (Class I, Section 3).

On motion of Mr. Kennelly, it was

*Voted*, That steps be taken to determine whether an increase in the statutory limit of the number of Foreign Honorary Members is desirable, and if so, how great the increase should be, and that a

committee should be appointed to consider this question, and if an increase be found desirable, to frame an amendment to the Statutes for consideration at the next stated meeting of the Academy.

The President appointed on this committee Vice-Presidents Kennelly, Parker, and Kittredge.

The following communication was presented:

Mr. Warren M. Persons: "The Statistical Basis for Forecasting Business Conditions."

The following paper was presented by title: "The Petrology of a Portion of the White Mountains, N. H.," by Marland P. Billings, presented by E. S. Larsen, Jr.

The meeting was dissolved at 10.25 P. M.

**One thousand one hundred and sixty-sixth meeting.**

**MAY 9, 1928.—ANNUAL MEETING.**

The Academy met at its House at 8.30 P. M.

The **PRESIDENT** in the Chair.

There were present forty-two Fellows and four guests.

The Records of the meeting of April 11 were read and approved. The following report of the Council was presented:

**REPORT OF THE COUNCIL.**

Since the last report of the Council there have been reported the deaths of nineteen Fellows: Henry Larcom Abbot, Thomas Willing Balch, John Spencer Bassett, Bertram Borden Boltwood, Francis Tiffany Bowles, Archibald Cary Coolidge, Samuel McChord Crothers, George Washington Goethals, Alfred Hemenway, James Kendall Hosmer, Alexander Crombie Humphreys, Gaetano Lanza, Charles Frederic Mabery, Nathan Matthews, Francis Weld Peabody, Theodore William Richards, Henry Paul Talbot, John Collins Warren, Harris Hawthorne Wilder; of four Foreign Honorary Members: Svante August Arrhenius, Willem Einthoven, Thomas Hardy, Hendrik Antoon Lorentz; and of one Associate, Edwin Hale Abbot.

Thirty-five Fellows, thirteen Foreign Honorary Members, and one

Associate were elected by the Council and announced to the Academy in May, 1927.

The roll now includes 569 Fellows, 67 Foreign Honorary Members, and 16 Associates (not including those elected in May, 1928).

The annual report of the Treasurer, Ingersoll Bowditch, was read, of which the following is an abstract.

#### GENERAL FUND.

##### *Receipts.*

From Investments . . . . .	\$2,876.50
From Assessments . . . . .	3,380.00
From Admissions . . . . .	270.00
From Interest on Deposits . . . . .	151.35
From Fund for Current Expenses . . . . .	1,926.13
	—————
	\$8,603.98

##### *Expenditures.*

Expenses of Library . . . . .	\$1,857.16
Treasurer's Expenses . . . . .	899.45
Books and Binding . . . . .	1,241.48
General Expenses . . . . .	894.19
House Expenses . . . . .	3,026.13
President's Expenses . . . . .	45.00
	—————
	\$7,963.41
Interest on Bonds bought . . . . .	112.50
Transferred to Publication Funds . . . . .	250.00
Income transferred to Principal . . . . .	278.07
	—————
	640.57
	—————
	\$8,603.98

#### RUMFORD FUND.

##### *Receipts.*

Income on hand April 1, 1927 . . . . .	\$13,918.46
From Investments . . . . .	4,229.82
	—————
	\$18,148.28

*Expenditures.*

Purchase and Binding of Books . . .	\$ 233.94
Publications . . . . .	71.73
Research . . . . .	2,743.94
Medals . . . . .	301.94
Tables of Constants, two years . .	400.00
	—————
	\$3,751.55
Income transferred to Principal . . . . .	204.63
	—————
	\$3,956.18

## WARREN FUND.

*Receipts.*

Income on hand April 1, 1927 . . . . .	\$ 460.32
From Investments . . . . .	1,173.50
	—————
	\$1,633.82

*Expenditures.*

Research . . . . .	\$ 625.00
Vault Rent, part . . . . .	3.00
	—————
	\$ 628.00
Interest on Notes bought . . . . .	8.13
Charged to cancel premiums on	
Notes bought . . . . .	5.00
Income transferred to Principal . . .	58.18
	—————
	71.31
	—————
	\$ 699.31

## PUBLICATION FUND.

*Receipts.*

Income on hand April 1, 1927 . . . . .	\$2,555.60
From Income Appleton Fund . . .	\$ 698.75
From Income Centennial Fund . .	2,542.77
From Authors' Reprints . . . .	177.04
From Sale of Publications . . . .	556.95
From General Fund Income . . .	250.00
	—————
	4,225.51
	—————
	\$6,781.11

*Expenditures.*

Publications . . . . .	\$1,768.25
Vault Rent, part . . . . .	10.00
	————
	\$1,778.25
Interest on Bonds bought . . . . .	9.13
Charged to cancel premium on Notes . . . . .	2.50
Income transferred to Principal . . . . .	152.41
	————
	164.04
	————
	\$1,942.29

## FRANCIS AMORY FUND.

*Receipts.*

From Investments . . . . .	\$2,055.50
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*Expenditures.*

Publishing Statement . . . . .	\$ 47.55
Interest on Bonds bought . . . . .	24.38
Charged to cancel premium on Bonds	
bought . . . . .	10.00
	————
	\$ 81.93
Income transferred to Principal . . . . .	1,973.57
	————
	\$2,055.50

The following reports were also presented:

## REPORT OF THE LIBRARY COMMITTEE.

During the year 127 volumes and 17 unbound numbers of periodicals have been borrowed by 22 Fellows and 12 libraries, and many more have been consulted at the Academy. All books taken out have been returned or satisfactorily accounted for.

The number of books on the shelves at the time of the last report was 40,884. During the year 355 volumes were added, making the number now 41,239. This includes 55 purchased from the General Fund, seven from the Rumford Fund, and 293 received by gift or exchange. The number of pamphlets added was 143.

The committee has made a general revision of the periodical subscription list and has decided to discontinue subscriptions to the following journals, beginning with January, 1928:

Annales des Mines  
 Central-Zeitung für Optik und Mechanik  
 Chemical News  
 Engineering  
 Revue Générale des Sciences  
 Scientia

while "Biological Abstracts" was added to the list.

With a balance of \$438.85 left from last year, an appropriation of \$3,000, and \$10.36 received from the sale of duplicates, the Library Committee has had at its disposal the sum of \$3,449.21, apart from the sums derived from the Rumford Fund. The total expenditure from this has been \$3,109, leaving an unexpended balance on April 1, 1928, of \$340.21. In addition there was available from the Rumford Fund for the purchase and binding of books on light and heat the sum of \$347.88, of which \$233.94 has been expended, leaving a balance of \$113.94.

The expenses charged to the Library during the financial year ending April 1, 1928, are:

Salaries . . . . .	\$1,800.00
Binding:	
General Fund . . . . .	
General Fund . . . . .	699.95
Rumford Fund . . . . .	68.50
Purchase of Books and Periodicals:	
General Fund . . . . .	551.89
Rumford Fund . . . . .	165.44
Miscellaneous . . . . .	57.16
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Total . . . . .	\$3,342.94

H. M. GOODWIN, *Librarian.*

May 9, 1928.

#### REPORT OF THE RUMFORD COMMITTEE.

The Committee held six meetings during the year (Oct. 19, Nov. 9, Dec. 7, 1927, and Jan. 11, Apr. 11, May 9, 1928).

The Committee made the following grants during the academic year 1927-28:

1927

No. 262. Oct. 9—Prof. Sebastian Albrecht, Dudley Observatory, Albany, N. Y., for the purchase of a spectrophotometer in the measurement of stellar wavelengths . . . . .	\$500
No. 263. Oct. 19—Prof. Paul Kirkpatrick, University of Hawaii, Honolulu, for apparatus in researches on X-Ray Reflection . . . . .	250
No. 264. Oct. 19—Prof. Harlow Shapley, Harvard College Observatory, towards the construction of a stellar comparator for use in researches on the proper motion and variability of stars . . . . .	500
No. 265. Nov. 9—Prof. Norton A. Kent, Boston University, for apparatus to be used in researches on spectrum analysis . . . . .	150
No. 266. Dec. 7—Prof. John R. Roebuck, University of Wisconsin, Madison, Wis., a further grant for apparatus to be used in the measurement of the Mechanical Equivalent of Heat . . . . .	500
No. 267. Dec. 7—Annual contribution to the Preparation of the International Annual Tables of Constants . . . . .	200
No. 268. Dec. 7—Prof. Raymond T. Birge, University of California, Berkeley, Cal., for aid in researches on spectrum analysis . . . . .	200
No. 269. Dec. 7—Prof. G. W. Pierce, Rumford Professor of Physics, Harvard University, for apparatus to be used in measurements on the velocity of light . . . . .	300
	\$2,600

The Committee voted unanimously, first on December 7, 1927, and again on January 11, 1928, to recommend the award of the Rumford premium to Edward Leamington Nichols, for his researches in spectrophotometry.

Progress reports concerning researches aided by Rumford grants have been received from Messrs. S. Albrecht, P. W. Bridgman, G. S. Forbes, G. H. Harrison, J. C. Hubbard, N. A. Kent, G. W. Pierce, J. R. Roebuck, F. A. Saunders.

The following recent publications relate to researches that have been aided by Rumford grants:

"Doublet Separation and Fine Structure of the Balmer Lines of Hydrogen," by Kent, Taylor and Pearson, Sept. 1927.

"Compressibility and Pressure Coefficient of Resistance of Ten Elements," by P. W. Bridgman. Proc. Am. Ac. Arts & Sc.

"Spectral Energy Characteristics of the Constricted Mercury Vapor Lamp—An Extremely Concentrated Source of Ultraviolet Illumination," by George Shannon Forbes and George R. Harrison. Jour. Optical Soc. of America, Vol. 11, No. 2, Aug. 1925.

"Relations Involving Internal Pressure, Intensity, Mercury Transfer, Cross Section and Electrical Conditions in Mercury-Vapor Lamps," by George Shannon Forbes and Albert Leighton. Jour. Optical Soc. of America, Vol. 12, No. 1, Jan. 1926.

Respectfully submitted,

A. E. KENNELLY, *Chairman.*

May 9, 1928.

#### REPORT OF THE C. M. WARREN COMMITTEE.

The Committee had at its disposal at the beginning of the fiscal year 1927-1928, \$1,511.24, of which \$405.92 was a balance from the previous year. Six hundred and twenty-five dollars (\$625) has been appropriated during the year, leaving a balance of \$886.24. The estimated available income for the year 1928-1929 is \$1,173.07.

Since the last annual report grants have been made as follows:

December 22, 1927: to Professor Ben Corson, Middlebury College, \$200, a renewal of a previous grant to continue his work on the condensation reactions of malonitrile.

December 22, 1927: to Dr. Louis Fieser, Bryn Mawr College, \$150, to be used in a research on the synthesis of polycyclic anthracene and anthraquinone derivatives.

Applications for grants amounting to \$1,200 are in the hands of the Committee and will be considered at its next meeting in May.

Reports of progress have been received from Professor C. James, Professor Ralph Bullard, Dr. Ben Corson and Dr. Charles F. H. Allen.

The papers listed below, recently published, describe the results of investigations aided by the Warren Fund. In each case there is an acknowledgment by the author of the assistance received.

Charles F. H. Allen and Harry B. Rosener: "The Synthesis of Alpha, Beta-Diacylstyrenes and Their Reaction with Hydrogen Bromide." (J. Amer. Chem. Soc., 49, 2110 (1927).)

B. B. Corson, R. K. Hazen, and J. S. Thomas: "The Mechanism Underlying the Reaction between Aldehydes or Ketones and Tautomeric Substances of the Keto-Enol Type. II. The Condensation of Oxomalonic Esters with Cyano-acetic and Malonic Esters." (J. Amer. Chem. Soc., 50, 913 (1928).)

B. B. Corson, Ruth A. Dodge, S. A. Harris, and R. K. Hazen: "Ethyl Benzoylformate." (Organic Syntheses, Vol. VII.)

JAMES F. NORRIS, *Chairman.*

May 9, 1928.

#### REPORT OF THE COMMITTEE OF PUBLICATION.

Since May 1927 five numbers aggregating 105 pages have been printed for Volume 62 of the Proceedings, and Volume 62 will soon be completed with the printing of the records number.

Nos. 1 and 2 of Volume 63 have just come off the press and No. 3 of Volume 63 is now in press.

Nos. 1 and 2 of Volume 63, aggregating 67 pages, cost \$516, which is at the rate of \$7.70 per page.

Many requests for publication of papers by non-members have come to the Committee, but in every case to date these requests have been declined because of lack of funds except in the case of No. 3 of Volume 63, which represents work done by a non-member which is published without cost to the Academy at the request of Professor Reginald A. Daly.

A request has just come in from Professor Franz Boas asking if the Academy can publish the material collected under the auspices of a committee of which he is chairman. The committee has been arranging texts, grammars, and dictionaries of Indian languages,

and has had the support of the Carnegie Corporation. If we are to undertake the publication of this material we will need additional funds. The funds available for next year will no more than cover the usual papers which will come in from our members.

Wm. S. FRANKLIN, *Chairman.*

May 9, 1928.

REPORT OF THE HOUSE COMMITTEE.

The House Committee has had funds at its disposal amounting to \$3,633.74, made up as follows:

Balance from last year . . . . .	\$ 103.74
Appropriation for 1927-28 . . . . .	3,235.00
Received for use of rooms . . . . .	295.00
	<hr/>
	\$3,633.74

Of this amount, the sum of \$2,648.24 has been spent for the usual routine expenses, janitor, light, power, heat, telephone, etc., and \$672.89 has been spent for upkeep, making a total of \$3,321.13, and leaving an unexpended balance of \$312.61.

Meetings have been held as follows:

The Academy

Stated meetings . . . . .	8
Open meetings . . . . .	1
American Antiquarian Society . . . . .	1
Archaeological Institute . . . . .	2
Boston Biological Society . . . . .	4
Boston Geological Society . . . . .	1
Chamber Music Club . . . . .	8
English-Speaking Union . . . . .	1
Harvard-Technology Chemical Club . . . . .	6
Mediaeval Academy of America . . . . .	1
National Women's Farm and Garden Association . . . . .	1
Needlework Guild of America . . . . .	1
New England Botanical Club . . . . .	9
New England Farm and Garden Association . . . . .	3
Zeta Phi Fraternity . . . . .	<hr/> 4
	51

The Council Chamber has been used for Academy Council and Committee meetings, and also by the Mediaeval Academy, the Trustees of the Children's Museum, the Thursday Evening Club, etc.

A detailed list of expenditures follows:

Janitor . . . . .	\$ 958.00
Electricity        Light . . . . .	183.26
Power . . . . .	66.64
	_____ 249.90
Coal . . . . .	1,084.00
Care of elevator . . . . .	88.55
Gas . . . . .	65.16
Water . . . . .	35.42
Telephone . . . . .	110.81
Ash tickets . . . . .	40.20
Upkeep . . . . .	672.89
Janitor's supplies and sundries . . . . .	16.20
	_____
Total expenditure . . . . .	\$3,321.13

WILLIAM H. LAWRENCE, *Chairman.*

May 9, 1928.

On the recommendation of the Treasurer, it was

*Voted*, That the Annual Assessment be \$10.00.

It was

*Voted*, To consider the proposed amendment to the Statutes to increase the number of Foreign Honorary Members from seventy-five to one hundred, with not more than thirty-five in any one class.

It was

*Voted*, there being no objection to this procedure, That the Corresponding Secretary be instructed to cast one ballot for the amendment.

On the recommendation of the Rumford Committee, it was

*Voted*, To award the Rumford Premium to Edward Leamington Nichols, for his researches in spectrophotometry.

The medals were then presented to Mr. Nichols by the President

The annual election resulted in the choice of the following officers and committees:

EDWIN B. WILSON, *President*  
 ARTHUR E. KENNELLY, *Vice-President for Class I*  
 GEORGE H. PARKER, *Vice-President for Class II*  
 GEORGE L. KITTREDGE, *Vice-President for Class III*  
 ROBERT P. BIGELOW, *Corresponding Secretary*  
 CHARLES B. GULICK, *Recording Secretary*  
 INGERSOLL BOWDITCH, *Treasurer*  
 HARRY M. GOODWIN, *Librarian*  
 WILLIAM S. FRANKLIN, *Editor*

*Councillors for Four Years.*

CHARLES A. KRAUS, *of Class I*      GEORGE R. MINOT, *of Class II*  
 W. CAMERON FORBES, *of Class III*

*Finance Committee.*

THOMAS BARBOUR      PAUL J. SACHS      FREDERICK P. FISH

*Rumford Committee.*

ARTHUR E. KENNELLY

ELIHU THOMSON	CHARLES L. NORTON
PERCY W. BRIDGMAN	HARLOW SHAPLEY
HARRY M. GOODWIN	FREDERICK A. SAUNDERS

*C. M. Warren Committee.*

JAMES F. NORRIS

GREGORY P. BAXTER	FREDERICK G. KEYES
WALTER L. JENNINGS	REID HUNT
ARTHUR D. LITTLE	CHARLES A. KRAUS

*Publication Committee.*

(Editor) WILLIAM S. FRANKLIN, <i>ex officio Chairman</i>	
EDWIN C. KEMBLE, <i>of Class I</i>	HERBERT V. NEAL, <i>of Class II</i>
GEORGE F. MOORE, <i>of Class III</i>	

*Library Committee.*

(Librarian) HARRY M. GOODWIN, *ex officio Chairman*  
RAYMOND C. ARCHIBALD, *of Class I* THOMAS BARBOUR, *of Class II*  
WILLIAM C. LANE, *of Class III*

*House Committee.*

S. BURT WOLBACH, *Chairman*  
ROBERT P. BIGELOW WILLIAM H. LAWRENCE

*Committee on Meetings.*

THE PRESIDENT  
THE RECORDING SECRETARY  
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GEORGE R. AGASSIZ JOHN E. THAYER

The Council reported that the following gentlemen were elected members of the Academy:

## FELLOWS.

## CLASS I.

## Section 1.

Jacob David Tamarkin, Providence, R. I.

## Section 2.

Adelbert Ames, Jr., Hanover, N. H.  
Arthur Holly Compton, Chicago, Ill.  
Manuel Sandoval Vallarta, Brookline.

## Section 3.

Louis John Gillespie, Cambridge.  
George Scatchard, Cambridge.

## Section 4.

Johnson O'Connor, Boston.  
Landgon Pearse, Chicago, Ill.  
John F. Stevens, New York, N. Y.  
Charles Terzaghi, Cambridge.

## CLASS II.

*Section 2.*

Richard Thornton Fisher, Petersham.  
Willis Linn Jepson, Berkeley, Calif.

*Section 3.*

John Wymond Miller Bunker, Belmont.  
Roy Graham Hoskins, Brookline.  
Thomas Hunt Morgan, New York, N. Y.

*Section 4.*

Warfield Theobald Longcope, Baltimore, Md.  
William Lorenzo Moss, Boston.  
John Howard Mueller, Boston.

## CLASS III.

*Section 1.*

Edgar Sheffield Brightman, Newton Centre.  
Walter Fenno Dearborn, Cambridge.  
John Dewey, New York, N. Y.  
Albert Cornelius Knudson, Cambridge.  
Ralph Barton Perry, Cambridge.  
Henry Bradford Washburn, Cambridge.

*Section 2.*

William Albert Nitze, Chicago, Ill.  
Joshua Whatmough, Cambridge.

*Section 3.*

James Phinney Baxter, 3d, Cambridge.  
Arthur Harrison Cole, Cambridge.  
William Yandell Elliott, Cambridge.  
Clarence Henry Haring, Cambridge.  
Warren Milton Persons, Cambridge.  
Arthur Meier Schlesinger, Cambridge.

*Section 4.*

Curtis Hidden Page, Hanover, N. H.

## FOREIGN HONORARY MEMBERS.

## CLASS I.

*Section 2.*

Friedrich Paschen, Berlin.

*Section 3.*

Søren Peter Lauritz Sørensen, Copenhagen.

*Section 4.*

Guglielmo Marconi, Bologna.

## CLASS II.

*Section 2.*

Carl Hansen Ostenfeldt, Copenhagen.

Alfred Barton Rendle, London.

*Section 3.*

Francis Arthur Bather, London.

Louis Dollo, Brussels.

Wolfgang Köhler, Berlin.

Charles Tate Regan, London.

D'Arcy Wentworth Thompson, St. Andrews.

*Section 4.*

Mikinosuke Miyajima, Tokyo.

## CLASS III.

*Section 1.*

Henri Louis Bergson, Paris.

Benedetto Croce, Naples.

Richard Burdon Haldane, Viscount Haldane of Cloan, London.

Edmund Husserl, Freiburg i.B.

*Section 3.*

Karl Pearson, London.

Hanns Oertel, Munich.

Arthur Cecil Pigou, Cambridge, England.

## ASSOCIATES.

Franklin Greene Balch, Jamaica Plain.  
Charles Francis Dorr Belden, Jamaica Plain.  
Charles Knowles Bolton, Boston.  
Roland William Boyden, Beverly.  
Frederick Pickering Cabot, Boston.  
George Alexander Philips Haldane-Duncan, Earl of Camperdown,  
Boston.  
John Candler Cobb, Milton.  
Howard Coonley, Milton.  
William Lusk Webster Field, Milton.  
Thomas Goddard Frothingham, Boston.  
Edward Jackson Holmes, Boston.  
George Snell Mandell, Boston.  
Robert Lincoln O'Brien, Dedham.  
Thomas Nelson Perkins, Westwood.  
Arthur Stanwood Pier, Milton.  
Alfred Lawrence Ripley, Andover.  
Odin Roberts, Boston.  
Jeremiah Smith, Jr., Cambridge.  
Payson Smith, Brookline.  
Eliot Wadsworth, Boston.  
Edmund Allen Whitman, Cambridge.

The following communication was presented:

Mr. Edward L. Nichols: "Reminiscences of Fifty Years' Work  
in Spectro-Photometry."

The following paper was presented by title:

"Studies on the Fauna of Hot Springs in the Western United  
States and the Biology of Thermophilous Animals," by Charles T.  
Brues.

The meeting was dissolved at 9.55 P. M.



## BIOGRAPHICAL NOTICES.

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## JAMES FURMAN KEMP (1859-1926).

Fellow in Class II, Section 1, 1921.

James Furman Kemp (born in New York on August 14, 1859, died November 17, 1926) received, as will appear from "Who's Who," vol. 14, all the honors an American geologist could expect, and was for thirty-five years head of the Department of Geology at Columbia University, New York City. The complete bibliographic list is long and will be found appended to the memoir in vol. 39 of the Bulletin of the Geological Society of America.

Longer personal tributes will be found in "Science," Dec. 11, 1926, vol. LXIV, no. 1670, pp. 639-642, and the "Columbia Alumni News," vol. XVIII, no. 10, Dec. 3, 1926, and the Proceedings of the American and Canadian Mining Institutes; and many other journals testify to the affection for him and the regret for his loss. To these accounts of his relations with colleagues and pupils a personal word may be added:

"Kemp was with me two years as a pupil, and for a time after graduation, and we drove and tramped together over the hills. He was a cheerful and devoted worker, and the best of companions. A few years ago I was his near neighbor for a long time, and learned to know him in his maturer years, and came to know his pleasant family. He was as always genial and faithful to his friends and his work, and I was delighted that he had not only become a widely known scholar, but a devoted and much loved teacher. It was a beautiful life."

B. K. EMERSON.

## FRANCIS WELD PEABODY (1881-1927).

Fellow in Class II, Section 4, 1921.

Francis Weld Peabody was successful as teacher, director of a laboratory, administrator of a hospital service, and practitioner of medicine. He made useful contributions to the science of medicine and was beloved for his humanity to his patients and his friends. He was endowed with an inspiring personality that radiated loving kindness. He faced Fate with a calm courage that will remain an example.

Detailed notices of his activities will be found in a minute of the records of the Faculty of Medicine of Harvard University; in the Boston Medical and Surgical Journal of October 20th and December 15th, 1927; the Journal of the American Medical Association, October 22, 1927, page 1443; the Harvard Graduates Magazine, January 1928.

M. J. ROSENAU.

The following is reprinted from the *Journal of Clinical Investigation*, vol. 5, no. 1, Dec. 1927:

Francis Weld Peabody was born at Cambridge, Massachusetts, November 24, 1881, and died at the same place, October 13, 1927. His ancestors were New England people of high character and distinguished ability. His father was formerly a professor at Harvard University and later Dean of the Harvard Divinity School. He received through inheritance a sound body and a good brain, and from his early environment, which was the best that this country offers, he undoubtedly acquired the "gentleness, and unshaken adherence to judgments deliberately formed; indifference to outward show and compliment, industry and assiduity," that were to distinguish him throughout his life.

He graduated from Harvard College in 1903, and the same year he entered the Harvard Medical School where he showed conspicuous ability. While still an undergraduate, he undertook with his teacher, Dr. J. H. Pratt, the solution of a bacteriological problem relating to typhoid fever, and this was published the month that he graduated, in the *Journal of the American Medical Association*. Thus he began the practice of investigation and publication, which he continued to the very end of his life. He received the degree of Doctor of Medicine in 1907, and the following year he served as interne in the Massachusetts General Hospital.

Thus far he had followed the beaten path. But now he departed from the course which at that time was almost universal in America. Instead of entering at once on the practice of his profession, he undertook his "Wander Jahre," a custom which, earlier at least, was frowned upon in America, but which in Europe has for centuries been held to offer the greatest rewards to the student in search of an education.

He spent two years in the Johns Hopkins Medical School at Baltimore, first as Assistant Resident Physician under Dr. Thayer, and later as Fellow in Pathology under Dr. Welch. In April of 1910, he went to Berlin and worked in the laboratory of Emil Fischer on organic chemistry. In the autumn, he returned to this country and became Assistant Resident Physician in the Hospital of the Rockefeller Institute, then newly opened. He remained there for almost two years, leaving in the spring for another trip to Europe, where he visited a number of clinics in Germany, made a short stay in Russia, and worked for six weeks on a physiological problem in the laboratory of Professor Krogh in Copenhagen.

He now returned to Boston after an absence of over four years. He did not return, however, with the idea that his education had been completed, that his student days were over. The Peter Bent Brigham Hospital had just been erected on ground adjacent to the Harvard Medical School, and it was intended that this hospital should be organized as a medical clinic of the school. Dr. Peabody was offered the position of Resident Physician and accepted this proposal for the reason, as he said, that this new institution provided facilities and equipment and teachers that would permit him to continue his studies and investigations under favorable conditions, and also because it gave him an opportunity to aid in the development of a modern medical clinic in which teaching and research should be important functions. At that time new ideas concerning medical education were in the air, and he was one of the small group of young men in this country who recognized the need of developing a scientific atmosphere in the medical clinic if the medical schools were to perform their proper function, and if medicine in this country was to keep abreast of that existing in other parts of the world.

He continued in residence at the Peter Bent Brigham Hospital for three years, working in the clinic, developing his ability as a teacher; busy in the wards, widening his experience with the maladies that afflict man, and increasing his sympathetic understanding of those who suffer; active in the laboratory, constantly carrying on investigations with methods of precision, and thus extending his knowledge of the nature of disease and increasing his power as a man of science. During all these years which had passed since graduation, he showed a

remarkable spirit of restraint and patience by persisting in the course of training on which he had, years before, voluntarily and independently resolved.

But these years were not merely years of self development and selfish acquisition of knowledge. He had been of great benefit to all the patients who came under his care, he had been helpful to the students with whom he had been in contact, he had been useful to his university to which he was devoted, and he had been of service to humanity through the contributions he had already made to medical knowledge. But in still other ways he was of service, for in 1914 he was given leave of absence to join a commission of the Rockefeller Foundation which went to China to give advice regarding the new school of medicine which it was proposed to create in Peking. As the medical member of this commission, he undoubtedly had much influence in shaping the future policy of the Peking Union Medical School, and he was later made a member of the China Medical Board of the Rockefeller Foundation.

In 1915 he gave up his residence at The Peter Bent Brigham Hospital but continued as Physician to that institution, and was appointed Associate Professor of Medicine in Harvard University. He now continued for five years to teach, to practice, and to investigate. During these years, however, there were many other professional activities. In 1917 he served as a member of the American Red Cross Commission to Roumania, and later to Russia. On the entry of the United States into the war, he became a member of the Army Medical Corps, and served in hospitals in this country, later going to France as Medical Consultant.

In 1921 he was appointed Professor of Medicine in Harvard University and, at the same time, became Director of the Thorndyke Memorial Laboratory. In Dr. Peabody's words, this laboratory "is a research department of the Boston City Hospital. Its establishment is due to the conviction of the Board of Trustees that the responsibility of the City Hospital is not limited to the treatment and care of individual patients, but includes also medical teaching, preventive medicine, and medical research." This attitude on the part of the authorities of this institution marked a decided departure from the traditional policy of American municipal hospitals, and was of

much significance for future medical education in this country. It was very fitting that the Trustees should have turned to Dr. Peabody to undertake the direction of this new department. Brief mention can only be made here of the splendid manner in which he carried out the plans of its organization, arranging that its equipment should permit the prosecution of fundamental studies concerning disease, and gathering together for its staff a group of well trained young men, eager for research. Here Dr. Peabody continued his teaching and investigation, at the same time stimulating and aiding his co-workers. Within a short time important contributions from the staff began to appear.

Dr. Peabody began his own career as an investigator of disease by undertaking studies concerning typhoid fever, the first of which has already been mentioned. During his residence at the Johns Hopkins Hospital, he began his studies of heart disease. Later, at the Rockefeller Institute, he undertook the investigation of problems relating to poliomyelitis and acute lobar pneumonia. At the Peter Bent Brigham Hospital, he began a long series of investigations concerning metabolism and the function of respiration. While Director of the Thorndyke Laboratory, he undertook the study of pernicious anemia. To all these subjects he made definite contributions. In all of his studies he was obviously interested in the application of the results to practice. For instance, he made studies concerning the function of respiration which have much scientific interest and significance, and he then indicated the application of his results; he showed the importance of a decrease in the vital capacity of the lungs as a factor in the production of dyspnea in heart disease, and demonstrated how the determination of the vital capacity could be made without difficulty in patients. He thus introduced into clinical medicine a new method that has proved to be of distinct value.

It is impossible in this place to attempt to evaluate his contributions to the science of medicine. That will undoubtedly be done elsewhere. It is one of the hardships suffered by workers in medicine that the domain is so vast, and that, if one is to investigate disease as a whole, he must be acquainted with many kinds of technique, for in no disease is there a disturbance of only one function, the entire mechanism of the body is always involved. The science of medicine demands that its votaries shall have some knowledge of all the sciences. That

Dr. Peabody could apply himself in succession to various branches of internal medicine, employing different methods in each, and to each one of these subjects adding to knowledge, is the best evidence of his ability and mental capacity. During his years at work in the Thordyke Laboratory, carrying on his duties as teacher, and, to a more limited extent, as practitioner, he found time to respond to many demands that were made upon him to give aid and council in projects of importance to medicine. When the *Journal of Clinical Investigation* was founded in 1924, he was made a member of the Editorial Board. His interest in, and sympathy with, the young men of the medical clinics who were making original contributions to the science of medicine, made him keenly desire that a special organ should be established in which their reports might be published. He was an active and useful member of the Board, and helped in shaping its policies. He served on the Council of the Association of American Physicians, and was also an officer in this organization. In 1926 he was made a member of the Board of Scientific Directors of the Rockefeller Institute for Medical Research.

His ability and training, his upright character, his academic interests, his success as a teacher and investigator, made him sought after by a number of universities to undertake the reorganization of their departments of medicine along modern lines. He refused, however, to leave his own university, believing that here he could be of the greatest service.

At the age of forty-five, he was at the height of his usefulness. With an ideal training, full of energy and resourcefulness, all those who were interested in medicine and its future looked upon him as one of its most able representatives, and as one upon whom would fall many of the responsibilities associated with shaping the development of medical education and practice in this country during the next decades. When, therefore, in the summer of 1926 his friends heard that, although apparently in the best of health, he was stricken with a serious disease, from which there was little chance of his recovering, they were shocked and dismayed; shocked that they were soon to lose a beloved associate, dismayed that the profession of medicine was to lose one of its most able defenders and promoters. But no consternation or apprehension was evident in Dr. Peabody himself. With at least

an outward calmness and tranquility, he faced the inevitable. He decided not to let the knowledge of his fate hinder him from continuing his work or prevent him from leading his accustomed life. Consideration for his family and friends undoubtedly influenced him in coming to this decision. Not with a sad and sorrowful countenance, but with a bright and unflinching spirit he continued his daily tasks. For over a year he continued his work, a comfort to his patients, an inspiration to his students and associates, a champion of the science of medicine, and an instrument in promoting its progress.

He was not only interested in the development of the science of medicine, however; he understood that "the application of the principles of science to the diagnosis and treatment of disease is only one limited aspect of medical practice." Shortly before his death he wrote an essay on "The Care of the Patient," which not only is a beautiful example of simple, straightforward writing but is an exposition of his own attitude toward his fellow men. The essay closes with the effective lines, "One of the essential qualities of the physician is interest in humanity, for the secret of the care of the patient is in caring for the patient." And this is also one of the secrets of his own engaging personality. This Abou Ben Adhem was devoted to his friends, fond of his associates. He liked people. He had delightful social qualities, and concealed a seriousness of mind and a great earnestness of purpose under a delightful and winning humor. He was always—

"A square-set man and honest; and his eyes,  
An out-door sign of all the warmth within,"

and even during his last days—

"Smiled with his lips—a smile beneath a cloud."

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THE RECORDING SECRETARY,

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OF THE  
FELLOWS, ASSOCIATES, AND FOREIGN HONORARY  
MEMBERS.

(Corrected to February 1, 1929.)

FELLOWS.—584.

(Number limited to six hundred.)

CLASS I.—*Mathematical and Physical Sciences*.—197.

SECTION I.—*Mathematics and Astronomy*.—50.

Charles Greeley Abbot	Washington, D. C.
Walter Sydney Adams	Pasadena, Cal.
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Raymond Clare Archibald	Providence, R. I.
Solon Irving Bailey	Cambridge
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William Wallace Campbell	Berkeley, Cal.
Julian Lowell Coolidge	Cambridge
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Leonard Eugene Dickson	Chicago, Ill.
Philip Fox	Evanston, Ill.
Fabian Franklin	New York, N. Y.
Edwin Brant Frost	Williams Bay, Wis.
William Caspar Graustein	Cambridge
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Edward Vermilye Huntington	Cambridge
Dunham Jackson	Minneapolis, Minn.

Oliver Dimon Kellogg	Cambridge
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Carl Otto Lampland	Flagstaff, Ariz.
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CLASS I., SECTION II.—*Physics*.—55.

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John Stone Stone	.	.	.	.	.	San Diego, Cal.
Maurice deKay Thompson	.	.	.	.	.	Brookline
Elihu Thomson	.	.	.	.	.	Swampscott
Manuel Sandoval Vallarta	.	.	.	.	.	Brookline
David Locke Webster	.	.	.	.	.	Palo Alto, Cal.
Edwin Bidwell Wilson	.	.	.	.	.	Brookline
Robert Williams Wood	.	.	.	.	.	Baltimore, Md.
John Zeleny	.	.	.	.	.	New Haven, Conn.

CLASS I., SECTION III.—*Chemistry*.—48.

Roger Adams	.	.	.	.	.	Urbana, Ill.
Wilder Dwight Bancroft	.	.	.	.	.	Ithaca, N. Y.
Gregory Paul Baxter	.	.	.	.	.	Cambridge
Arthur Alphonzo Blanchard	.	.	.	.	.	Cambridge
Marston Taylor Bogert	.	.	.	.	.	New York, N. Y.
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Russell Henry Chittenden	.	.	.	.	.	New Haven, Conn.
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James Bryant Conant	.	.	.	.	.	Cambridge
Tenney Lombard Davis	.	.	.	.	.	Norwell
Henry Fay	.	.	.	.	.	Boston
George Shannon Forbes	.	.	.	.	.	Cambridge
Edward Curtis Franklin	.	.	.	.	.	Palo Alto, Cal.
Louis John Gillespie	.	.	.	.	.	Cambridge
Frank Austin Gooch	.	.	.	.	.	New Haven, Conn.
Lawrence Joseph Henderson	.	.	.	.	.	Cambridge
Charles Loring Jackson	.	.	.	.	.	Boston
Walter Louis Jennings	.	.	.	.	.	Worcester
Grinnell Jones	.	.	.	.	.	Cambridge
Frederick George Keyes	.	.	.	.	.	Cambridge
Elmer Peter Kohler	.	.	.	.	.	Cambridge
Charles August Kraus	.	.	.	.	.	Providence, R. I.

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Willis Rodney Whitney	Schenectady, N. Y.
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CLASS I., SECTION IV.—*Technology and Engineering*.—44.

Comfort Avery Adams	Belmont
Bernard Arthur Behrend	Wellesley Hills
Charles Francis Brush	Cleveland, O.
William Hubert Burr	New Canaan, Conn.
Vannevar Bush	Belmont
John Joseph Carty	New York, N. Y.
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Langdon Pearse	Chicago, Ill.
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Henry Lloyd Smyth	Watertown
Charles Milton Spofford	Brookline
John F. Stevens	New York, N. Y.
Samuel Wesley Stratton	Cambridge
George Fillmore Swain	Brookline
Charles Terzaghi	Cambridge
Edward Pearson Warner	Washington, D. C.
Robert Spurr Weston	Boston
Joseph Ruggles Worcester	Boston

CLASS II.—*Natural and Physiological Sciences*.—197.SECTION I.—*Geology, Mineralogy, and Physics of the Globe*.—49.

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Isaiah Bowman	New York, N. Y.
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Herdman Fitzgerald Cleland	Williamstown
Reginald Aldworth Daly	Cambridge
Edward Salisbury Dana	New Haven, Conn.
William Morris Davis	Boston
Benjamin Kendall Emerson	Amherst
William Ebenezer Ford	New Haven, Conn.
James Walter Goldthwait	Hanover, N. H.
Louis Caryl Graton	Cambridge
Herbert Ernest Gregory	New Haven, Conn.
William Jackson Humphreys	Washington, D. C.
Ellsworth Huntington	New Haven, Conn.
Robert Tracy Jackson	Peterborough, N. H.
Thomas Augustus Jagger	Honolulu, H. I.
Douglas Wilson Johnson	New York, N. Y.
Arthur Keith	Washington, D. C.
Alfred Church Lane	Cambridge
Esper Signius Larsen, Jr.	Cambridge
Andrew Cowper Lawson	Berkeley, Cal.
Charles Kenneth Leith	Madison, Wis.
Waldemar Lindgren	Brookline
Frederic Brewster Loomis	Amherst
Alexander George McAdie	Readville
Donald Hamilton McLaughlin	Cambridge
Kirtley Fletcher Mather	Cambridge
John Campbell Merriam	Washington, D. C.
William John Miller	Los Angeles, Cal.
Charles Palache	Cambridge
Percy Edward Raymond	Lexington
Austin Flint Rogers	Palo Alto, Cal.

Robert Wilcox Sayles	Chesnut Hill
Waldemar Theodore Schaller	Washington, D. C.
Charles Schuchert	New Haven, Conn.
William Berryman Scott	Princeton, N. J.
Hervey Woodburn Shimer	Hingham
Frank Bursley Taylor	Fort Wayne, Ind.
Thomas Wayland Vaughan	La Jolla, Cal.
Robert DeCourcy Ward	Cambridge
Charles Hyde Warren	New Haven, Conn.
David White	Washington, D. C.
Herbert Percy Whitlock	New York, N. Y.
Bailey Willis	Palo Alto, Cal.
Arthur Winslow	Boston
John Eliot Wolff	Pasadena, Cal.
Frederick Eugene Wright	Washington, D. C.

CLASS II, SECTION II.—*Botany*.—36.

Oakes Ames	North Easton
Joseph Charles Arthur	Lafayette, Ind.
Irving Widmer Bailey	Cambridge
Liberty Hyde Bailey	Ithaca, N. Y.
Edward Wilber Berry	Baltimore, Md.
Nathaniel Lord Britton	New York, N. Y.
Douglas Houghton Campbell	Palo Alto, Cal.
George Perkins Clinton	New Haven, Conn.
Bradley Moore Davis	Ann Arbor, Mich.
Edward Murray East	Jamaica Plain
Rollins Adams Emerson	Ithaca, N. Y.
Alexander William Evans	New Haven, Conn.
Merritt Lyndon Fernald	Cambridge
Richard Thornton Fisher	Petersham
Harvey Monroe Hall	Berkeley, Cal.
Robert Almer Harper	New York, N. Y.
Albert Spear Hitchcock	Washington, D. C.
John George Jack	East Walpole
Edward Charles Jeffrey	Cambridge
Willis Linn Jepson	Berkeley, Cal.

Ivan Murray Johnston	Cambridge
Fred Dayton Lambert	Tufts College
Jacob Goodale Lipman	New Brunswick, N. J.
Burton Edward Livingston	Baltimore, Md.
Elmer Drew Merrill	Berkeley, Cal.
Winthrop John Vanleuven Osterhout	New York, N. Y.
George James Peirce	Palo Alto, Cal.
Alfred Rehder	Jamaica Plain
Benjamin Lincoln Robinson	Cambridge
William Albert Setchell	Berkeley, Cal.
Arthur Bliss Seymour	Cambridge
Elvin Charles Stakman	St. Paul, Minn.
William Codman Sturgis	New York, N. Y.
Roland Thaxter	Cambridge
William Trelease	Urbana, Ill.
William Henry Weston, Jr.	Cambridge

CLASS II., SECTION III.—*Zoology and Physiology*.—64.

Nathan Banks	Cambridge
Thomas Barbour	Boston
Francis Gano Benedict	Boston
Henry Bryant Bigelow	Concord
Robert Payne Bigelow	Brookline
Edwin Garrigues Boring	Cambridge
William T. Bovie	Chicago, Ill.
Edward Allen Boyden	Chicago, Ill.
John Lewis Bremer	Boston
Charles Thomas Brues	Jamaica Plain
John Wymond Miller Bunker	Belmont
Walter Bradford Cannon	Cambridge
Thorne Martin Carpenter	Boston
William Ernest Castle	Belmont
Charles Value Chapin	Providence, R. I.
Benjamin Preston Clark	Boston
Edwin Joseph Cohn	Cambridge
Edwin Grant Conklin	Princeton, N. J.
Manton Copeland	Brunswick, Me.

William John Crozier	Cambridge
Joseph Augustine Cushman	Sharon
Charles Benedict Davenport	Cold Spring Harbor, N. Y.
Samuel Randall Detwiler	New York, N. Y.
Raymond Dodge	New Haven, Conn.
Gilman Arthur Drew	Eagle Lake, Fla.
Cecil Kent Drinker	Boston
Herbert McLean Evans	Berkeley, Cal.
Alexander Forbes	Milton
Samuel Henshaw	Cambridge
Samuel Jackson Holmes	Berkeley, Cal.
Roy Graham Hoskins	Brookline
Leland Ossian Howard	Washington, D. C.
Herbert Spencer Jennings	Baltimore, Md.
Charles Willison Johnson	Brookline
Charles Atwood Kofoid	Berkeley, Cal.
Frederic Thomas Lewis	Waban
Ralph Stayner Lillie	Chicago, Ill.
Richard Swann Lull	New Haven, Conn.
Edward Laurens Mark	Cambridge
Ernest Gale Martin	Palo Alto, Cal.
Albert Davis Mead	Providence, R. I.
Axel Leonard Melander	New York, N. Y.
Gerrit Smith Miller	Washington, D. C.
Thomas Hunt Morgan	Pasadena, Cal.
Herbert Vincent Neal	Tufts College
Henry Fairfield Osborn	New York, N. Y.
George Howard Parker	Cambridge
William Patten	Hanover, N. H.
Raymond Pearl	Baltimore, Md.
John Charles Phillips	Wenham
Henry Augustus Pilsbry	Philadelphia, Pa.
Frederick Haven Pratt	Wellesley Farms
Herbert Wilbur Rand	Cambridge
Arthur Clarence Redfield	Boston
William Emerson Ritter	Berkeley, Cal.
Alexander Grant Ruthven	Ann Arbor, Mich.

Percy Goldthwait Stiles	Newtonville
John Eliot Thayer	Lancaster
John Broadus Watson	New York, N. Y.
Arthur Wisswald Weyssse	Boston
William Morton Wheeler	Jamaica Plain
Edmund Beecher Wilson	New York, N. Y.
Frederick Adams Woods	New York, N. Y.
Robert Mearns Yerkes	Washington, D. C.

CLASS II., SECTION IV.—*Medicine and Surgery*.—48.

Nathaniel Allison	Boston
Kenneth Daniel Blackfan	Brookline
Charles Macfie Campbell	Cambridge
Alexis Carrel	New York, N. Y.
Henry Asbury Christian	Boston
Stanley Cobb	Ponkapoag
Rufus Cole	New York, N. Y.
Harvey Cushing	Boston
David Linn Edsall	Cambridge
Simon Flexner	New York, N. Y.
James Lawder Gamble	Brookline
Joseph Lincoln Goodale	Boston
Robert Battey Greenough	Boston
Ross Granville Harrison	New Haven, Conn.
Percy Rogers Howe	Boston
William Henry Howell	Baltimore, Md.
Reid Hunt	Boston
Henry Jackson	Boston
Elliott Proctor Joslin	Boston
William Williams Keen	Philadelphia, Pa.
Roger Irving Lee	Brookline
Warfield Theobald LongCOPE	Baltimore, Md.
Frank Burr Mallory	Brookline
William James Mayo	Rochester, Minn.
James Howard Means	Boston
George Richards Minot	Boston
William Lorenzo Moss	Jamaica Plain

John Howard Mueller	Boston
Robert Bayley Osgood	Boston
Joseph Hersey Pratt	Boston
William Lambert Richardson	Boston
Milton Joseph Rosenau	Brookline
Andrew Watson Sellards	Boston
Theobald Smith	Princeton, N. J.
Charles Wardell Stiles	Washington, D. C.
Richard Pearson Strong	Boston
Edward Wyllis Taylor	Boston
William Sydney Thayer	Baltimore, Md.
Ernest Edward Tyzzer	Wakefield
Frederick Herman Verhoeff	Boston
Henry Pickering Walcott	Cambridge
Joseph Treloar Wearn	Weston
William Henry Welch	Baltimore, Md.
Benjamin White	Boston
Francis Henry Williams	Boston
Simeon Burt Wolbach	Boston
Horatio Curtis Wood	Philadelphia, Pa.
Hans Zinsser	Boston

CLASS III.—*Moral and Political Sciences.*—190.SECTION I.—*Theology, Philosophy, and Jurisprudence.*—41.

Joseph Henry Beale	Cambridge
Charles Henry Brent	Buffalo, N. Y.
Edgar Sheffield Brightman	Newton Centre
Walter Fenno Dearborn	Cambridge
Edmund Burke Delabarre	Providence, R. I.
Edward Staples Drown	Cambridge
William Harrison Dunbar	Cambridge
William Wallace Fenn	Cambridge
Frederick Perry Fish	Brookline
George Angier Gordon	Brookline
William Ernest Hocking	Cambridge
Charles Evans Hughes	New York, N. Y.

Frederick John Foakes Jackson	.....	New York, N. Y.
Albert Cornelius Knudson	.....	Cambridge
William Lawrence	.....	Boston
Frederick Lawton	.....	Boston
William Caleb Loring	.....	Boston
William McDougall	.....	Durham, N. C.
Edward Cadwell Moore	.....	Cambridge
John Bassett Moore	.....	New York, N. Y.
George Herbert Palmer	.....	Cambridge
Charles Edwards Park	.....	Boston
Leighton Parks	.....	New York, N. Y.
Francis Greenwood Peabody	.....	Cambridge
George Wharton Pepper	.....	Philadelphia, Pa.
Ralph Barton Perry	.....	Cambridge
Roscoe Pound	.....	Watertown
Elihu Root	.....	New York, N. Y.
James Hardy Ropes	.....	Cambridge
Arthur Prentice Rugg	.....	Worcester
George Sarton	.....	Cambridge
Austin Wakeman Scott	.....	Cambridge
Willard Learoyd Sperry	.....	Cambridge
Moorfield Storey	.....	Boston
William Howard Taft	.....	Washington, D. C.
William Cushing Wait	.....	Medford
Eugene Wambaugh	.....	Cambridge
Winslow Warren	.....	Dedham
Henry Bradford Washburn	.....	Cambridge
Samuel Williston	.....	Belmont
Quincy Wright	.....	Chicago, Ill.

CLASS III., SECTION II.—*Philology and Archaeology*.—54.

Francis Greenleaf Allinson	.....	Providence, R. I.
William Rosenzweig Arnold	.....	Cambridge
Franz Boas	.....	New York, N. Y.
Ingersoll Bowditch	.....	Jamaica Plain
Carl Darling Buck	.....	Chicago, Ill.
Eugene Watson Burlingame	.....	Albany, N. Y.

Edward Capps	Princeton, N. J.
George Henry Chase	Cambridge
Walter Eugene Clark	Cambridge
Roland Burrage Dixon	Cambridge
Franklin Edgerton	New Haven, Conn.
Jesse Walter Fewkes	Washington, D. C.
Jeremiah Denis Mathias Ford	Cambridge
Charles Hall Grandgent	Cambridge
Louis Herbert Gray	New York, N. Y.
William Chase Greene	Cambridge
Charles Burton Gulick	Cambridge
Roy Kenneth Hack	Cincinnati, O.
William Arthur Heidel	Middletown, Conn.
George Lincoln Hendrickson	New Haven, Conn.
Bert Hodge Hill	Athens, Greece
Elijah Clarence Hills	Berkeley, Cal.
William Henry Holmes	Washington, D. C.
Earnest Albert Hooton	Cambridge
Edward Washburn Hopkins	New Haven, Conn.
William Guild Howard	Cambridge
Aleš Hrdlička	Washington, D. C.
Eugene Xavier Louis Henry Hyvernat	Washington, D. C.
Carl Newell Jackson	Cambridge
James Richard Jewett	Cambridge
Alfred Vincent Kidder	Andover
Alfred Louis Kroeber	Berkeley, Cal.
Kirsopp Lake	Cambridge
Henry Roseman Lang	New Haven, Conn.
Charles Rockwell Lanman	Cambridge
David Gordon Lyon	Cambridge
Clifford Herschel Moore	Cambridge
George Foot Moore	Cambridge
William Albert Nitze	Chicago, Ill.
Chandler Rathfon Post	Cambridge
Edward Kennard Rand	Cambridge
George Andrew Reisner	Cambridge
Edward Robinson	New York, N. Y.

Fred Norris Robinson	Cambridge
Rudolph Schevill	Berkeley, Cal.
Herbert Weir Smyth	Cambridge
Herbert Joseph Spinden	Cambridge
Franklin Bache Stephenson	Washington, D. C.
Charles Cutler Torrey	New Haven, Conn.
Alfred Marston Tozzer	Cambridge
Langdon Warner	Cambridge
Joshua Whatmough	Cambridge
Clark Wissler	New York, N. Y.
James Haughton Woods	Cambridge

CLASS III., SECTION III.—*Political Economy and History*.—49.

Wilbur Cortez Abbott	Cambridge
Charles McLean Andrews	New Haven, Conn.
James Phinney Baxter, 3d	Cambridge
Carl Lotus Becker	Ithaca, N. Y.
Robert Pierpont Blake	Cambridge
Charles Jesse Bullock	Cambridge
Thomas Nixon Carver	Cambridge
Edward Channing	Cambridge
John Bates Clark	New York, N. Y.
Arthur Harrison Cole	Cambridge
Richard Henry Dana	Cambridge
Clive Day	New Haven, Conn.
Davis Rich Dewey	Cambridge
William Yandell Elliott	Cambridge
Ephraim Emerton	Cambridge
Henry Walcott Farnam	New Haven, Conn.
Max Farrand	San Gabriel, Cal.
William Scott Ferguson	Cambridge
Irving Fisher	New Haven, Conn.
William Cameron Forbes	Milton
Worthington Chauncey Ford	Cambridge
Edwin Francis Gay	Cambridge
Frank Johnson Goodnow	Baltimore, Md.
Evarts Boutell Greene	New York, N. Y.

Arthur Twining Hadley	.....	New Haven, Conn.
Clarence Henry Haring	.....	Cambridge
Albert Bushnell Hart	.....	Cambridge
Charles Homer Haskins	.....	Cambridge
Charles Downer Hazen	.....	New York, N. Y.
Arthur Norman Holcombe	.....	Cambridge
George La Piana	.....	Cambridge
Abbott Lawrence Lowell	.....	Cambridge
William MacDonald	.....	New York, N. Y.
Charles Howard McIlwain	.....	Cambridge
Roger Bigelow Merriman	.....	Cambridge
Samuel Eliot Morison	.....	Boston
William Bennett Munro	.....	Boston
Charles Lemuel Nichols	.....	Worcester
Warren Milton Persons	.....	New York, N. Y.
Michael Ivanovich Rostovtzeff	.....	New Haven, Conn.
Arthur Meier Schlesinger	.....	Cambridge
John Osborne Sumner	.....	Boston
Frank William Taussig	.....	Cambridge
Frederick Jackson Turner	.....	San Gabriel, Cal.
Claude Halstead Van Tyne	.....	Ann Arbor, Mich.
Westel Woodbury Willoughby	.....	Baltimore, Md.
George Grafton Wilson	.....	Cambridge
George Parker Winship	.....	Charles River
Allyn Abbott Young	.....	Cambridge

CLASS III., SECTION IV.—*Literature and the Fine Arts.*—46.

Irving Babbitt	.....	Cambridge
George Pierce Baker	.....	New Haven, Conn.
Frank Weston Benson	.....	Salem
Le Baron Russell Briggs	.....	Bournedale
Charles Allerton Coolidge	.....	Boston
Frederick Shepherd Converse	.....	Westwood
Wilberforce Eames	.....	New York, N. Y.
Edward Waldo Emerson	.....	Concord
William Emerson	.....	Cambridge
Arthur Fairbanks	.....	Hanover, N. H.

Frank Edgar Farley	Middletown, Conn.
Edward Waldo Forbes	Cambridge
Kuno Francke	Cambridge
Daniel Chester French	New York, N. Y.
Horace Howard Furness	Philadelphia, Pa.
Wallace Goodrich	Boston
Robert Grant	Boston
Morris Gray	Boston
Chester Noyes Greenough	Cambridge
Charles Hopkinson	Manchester
Mark Antony DeWolfe Howe	Boston
Archer Milton Huntington	New York, N. Y.
George Lyman Kittredge	Cambridge
William Coolidge Lane	Cambridge
John Ellerton Lodge	Boston
Charles Martin Tornov Loeffler	Medfield
John Livingston Lowes	Cambridge
Charles Donagh Maginnis	Brookline
Albert Matthews	Boston
Harold Murdock	Brookline
William Allan Neilson	Northampton
Curtis Hidden Page	Hanover, N. H.
William Lyon Phelps	New Haven, Conn.
Arthur Kingsley Porter	Cambridge
Herbert Putnam	Washington, D. C.
Edwin Arlington Robinson	New York, N. Y.
Denman Waldo Ross	Cambridge
Paul Joseph Sachs	Cambridge
Ellery Sedgwick	Boston
Henry Dwight Sedgwick	Boston
Richard Clipston Sturgis	Boston
Edmund C. Tarbell	Boston
Charles Howard Walker	Boston
Owen Wister	Philadelphia, Pa.
George Edward Woodberry	Beverly
Charles Henry Conrad Wright	Cambridge

## ASSOCIATES.—33.

Charles Francis Adams	Concord
Francis Noyes Balch	Jamaica Plain
Franklin Greene Balch	Boston
Charles Foster Batchelder	Cambridge
Charles Francis Dorr Belden	Jamaica Plain
Roland William Boyden	Beverly
Frederick Pickering Cabot	Boston
William Brooks Cabot	Boston
John Candler Cobb	Milton
Howard Coonley	Milton
John Albert Cousens	Tufts College
Henry Winchester Cunningham	Milton
Charles Ernest Fay	Somerville
William Lusk Webster Field	Milton
Francis Russell Hart	Boston
Edward Jackson Holmes	Boston
William James	Cambridge
Nathaniel Thayer Kidder	Milton
Everett Morss	Boston
Robert Lincoln O'Brien	Dedham
Thomas Nelson Perkins	Westwood
Andrew James Peters	Jamaica Plain
Anthony John Philpott	Arlington
Arthur Stanwood Pier	Hyde Park
Alfred Lawrence Ripley	Andover
Odin Roberts	Boston
Jeremiah Smith, Jr.	Cambridge
Payson Smith	Brookline
Charles Henry Taylor	Boston
Eliot Wadsworth	Boston
Edwin Sibley Webster	Brookline
Edmund Allen Whitman	Cambridge
Benjamin Loring Young	Weston

## FOREIGN HONORARY MEMBERS.—82.

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CLASS I.—*Mathematical and Physical Sciences*.—24.SECTION I.—*Mathematics and Astronomy*.—7.

Arthur Stanley Eddington	.	.	.	.	.	.	Cambridge
Jacques Salomon Hadamard	.	.	.	.	.	.	Paris
Godfrey Harold Hardy	.	.	.	.	.	.	Oxford
Ejnar Hertzsprung	.	.	.	.	.	.	Leyden
Tullio Levi-Civita	.	.	.	.	.	.	Rome
Charles Emile Picard	.	.	.	.	.	.	Paris
Charles Jean de la Vallée Poussin	.	.	.	.	.	.	Louvain

CLASS I., SECTION II.—*Physics*.—6.

Albert Einstein	.	.	.	.	.	.	Berlin
Sir Joseph Larmor	.	.	.	.	.	.	Cambridge
Friedrich Paschen	.	.	.	.	.	.	Berlin
Max Planck	.	.	.	.	.	.	Berlin
Sir Ernest Rutherford	.	.	.	.	.	.	Cambridge
Sir Joseph John Thomson	.	.	.	.	.	.	Cambridge

CLASS I., SECTION III.—*Chemistry*.—6.

Peter Debye	.	.	.	.	.	.	Zurich
Fritz Haber	.	.	.	.	.	.	Berlin
Henri Louis Le Chatelier	.	.	.	.	.	.	Paris
Wilhelm Ostwald	.	.	.	.	.	.	Leipzig
William Henry Perkin	.	.	.	.	.	.	Oxford
Søren Peter Lauritz Sørensen	.	.	.	.	.	.	Copenhagen

CLASS I., SECTION IV.—*Technology and Engineering*.—5.

Ferdinand Foch	.	.	.	.	.	.	Paris
Joseph Jacques Césaire Joffre	.	.	.	.	.	.	Paris
Maurice d'Ocagne	.	.	.	.	.	.	Paris
Vsevolod Evgenievich Timonoff	.	.	.	.	.	.	Leningrad
William Cawthorne Unwin	.	.	.	.	.	.	London

CLASS II.—*Natural and Physiological Sciences*.—31.SECTION I.—*Geology, Mineralogy, and Physics of the Globe*.—9.

Frank Dawson Adams	Montreal
Charles Barrois	Lille
Waldemar Christofer Brögger	Oslo
Viktor Goldschmidt	Heidelberg
Albert Heim	Zurich
Emmanuel de Margerie	Paris
Gustaf Adolf Frederik Molengraaff	Delft
Sir William Napier Shaw	London
Johan Herman Lie Vogt	Trondhjem

CLASS II., SECTION II.—*Botany*.—7.

John Briquet	Geneva
Adolf Engler	Berlin
Carl Hansen Ostenfelt	Copenhagen
Alfred Barton Rendle	London
Ignatz Urban	Berlin
Hugo de Vries	Luntern
Richard Wettstein	Vienna

CLASS II., SECTION III.—*Zoology and Physiology*.—9.

Francis Arthur Bather	London
George Albert Boulenger	Brussels
Maurice Caullery	Paris
Louis Dollo	Brussels
Wolfgang Köhler	Berlin
Sir Edwin Ray Lankester	London
George Henry Falkiner Nuttall	Cambridge
Charles Tate Regan	London
D'Arcy Wentworth Thompson	St. Andrews

CLASS II., SECTION IV.—*Medicine and Surgery*.—6.

Henry Hallett Dale	London
Sir Thomas Barlow, Bart	London
Mikinosuke Miyajima	Tokyo
Friedrich von Müller	Munich
Francis John Shepherd	Montreal
Sir Charles Scott Sherrington	Oxford

CLASS III.—*Moral and Political Sciences*.—27.SECTION I.—*Theology, Philosophy, and Jurisprudence*.—8.

Rt. Hon. Arthur James Balfour, Earl of Balfour . . . . .	Prestonkirk
Henri Louis Bergson . . . . .	Paris
Francis Crawford Burkitt . . . . .	Cambridge
Benedetto Croce . . . . .	Naples
Edmund Husserl . . . . .	Freiburg i. B.
Raymond Poincaré . . . . .	Paris
Rt. Hon. Sir Frederick Pollock, Bart. . . . .	London
Joseph Redlich . . . . .	Vienna

CLASS III., SECTION II.—*Philology and Archaeology*.—8.

Wilhelm Dörpfeld . . . . .	Athens
Karl Friedrich Geldner . . . . .	Marburg
Henri Guy . . . . .	Grenoble
Hermann Georg Jacobi . . . . .	Bonn
Arthur Anthony Macdonell . . . . .	Oxford
Alfred Percival Maudslay . . . . .	Hereford
Hanns Oertel . . . . .	Munich
Ramon Menendez Pidal . . . . .	Madrid

CLASS III., SECTION III.—*Political Economy and History*.—6.

Léon Duguit . . . . .	Bordeaux
Adolf Harnack . . . . .	Berlin
Karl Pearson . . . . .	London
Arthur Cecil Pigou . . . . .	Cambridge
Henri Pirenne . . . . .	Ghent
Rt. Hon. Sir George Otto Trevelyan, Bart. . . . .	London

CLASS III., SECTION IV.—*Literature and the Fine Arts*.—5.

Jean Adrien Antoine Jules Jusserand . . . . .	Paris
Rudyard Kipling . . . . .	Burwash
Victor Laloux . . . . .	Paris
Gilbert Murray . . . . .	Oxford
Henri Rabaud . . . . .	Paris

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The letters A, F, and FHM refer to the lists of Associates, Fellows, and Foreign Honorary Members, respectively. The class and section are indicated by the numerals following.

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 Coolidge, C. A. F, III: 4  
 Coolidge, J. L. F, I: 1  
 Coolidge, W. D. F, I: 2  
 Coonley, H. A  
 Copeland, M. F, II: 3  
 Cousens, J. A. A  
 Crew, H. F, I: 2  
 Croce, B. FHM, III: 1  
 Crozier, W. J. F, II: 3  
 Cunningham, H. W. A  
 Cushing, H. F, II: 4  
 Cushman, J. A. F, II: 3  
 Dale, H. H. FHM, II: 4  
 Daly, R. A. F, II: 1  
 Dana, E. S. F, II: 1  
 Dana, R. H. F, III: 3  
 Davenport, C. B. F, II: 3  
 Davis, A. P. F, I: 4  
 Davis, B. M. F, II: 2  
 Davis, H. N. F, I: 2  
 Davis, T. L. F, I: 3  
 Davis, W. M. F, II: 1  
 Day, A. L. F, I: 2  
 Day, C. F, III: 3  
 Dearborn, W. F. F, III: 1  
 Debye, P. FHM, I: 3  
 Delabarre, E. B. F, III: 1  
 Detwiler, S. R. F, II: 3  
 Dewey, D. R. F, III: 3  
 Dickson, L. E. F, I: 1  
 Dillon, T. H. F, I: 4  
 Dixon, R. B. F, III: 2  
 Dodge, R. F, II: 3  
 Dörpfeld, W. F, III: 2  
 Dollo, L. FHM, II: 3  
 Drew, G. A. F, II: 3  
 Drinker, C. K. F, II: 3

Drinker, P. F, I: 4  
 Drisko, W. J. F, I: 2  
 Drown, E. S. F, III: 1  
 Duane, W. F, I: 2  
 Duff, A. W. F, I: 2  
 Duguit, L. FHM, III: 3  
 Dunbar, W. H. F, III: 1  
 Dunn, G. F, I: 4  
 Durand, W. F. F, I: 4  
 Eames, W. F, III: 4  
 East, E. M. F, II: 2  
 Eddington, A. S. FHM, I: 1  
 Edgar, C. L. F, I: 4  
 Edgerton, F. F, III: 2  
 Edsall, D. L. F, II: 4  
 Einstein, A. FHM, I: 2  
 Elliott, W. Y. F, III: 3  
 Emerson, B. K. F, II: 1  
 Emerson, E. W. F, III: 4  
 Emerson, R. A. F, II: 2  
 Emerson, W. F, III: 4  
 Emerton, E. F, III: 3  
 Engler, A. FHM, II: 2  
 Evans, A. W. F, II: 2  
 Evans, H. M. F, II: 3  
 Ewell, A. W. F, I: 2  
 Fair, G. M. F, I: 4  
 Fairbanks, A. F, III: 4  
 Farley, F. E. F, III: 4  
 Farnam, H. W. F, III: 3  
 Farrand, M. F, III: 3  
 Fay, C. E. A  
 Fay, F. H. F, I: 4  
 Fay, H. F, I: 3  
 Fenn, W. W. F, III: 1  
 Ferguson, W. S. F, III: 3  
 Fernald, M. L. F, II: 2  
 Fewkes, J. W. F, III: 2  
 Field, W. L. W. A  
 Fish, F. P. F, III: 1  
 Fisher, I. F, III: 3  
 Fisher, R. T. F, II: 2  
 Flexner, S. F, II: 4  
 Foch, F. FHM, I: 4  
 Forbes, A. F, II: 3  
 Forbes, E. W. F, III: 4  
 Forbes, G. S. F, I: 3  
 Forbes, W. C. F, III: 3  
 Ford, J. D. M. F, III: 2  
 Ford, W. C. F, III: 3  
 Ford, W. E. F, II: 1  
 Fox, P. F, I: 1  
 Francke, K. F, III: 4  
 Franklin, E. C. F, I: 3  
 Franklin, F. F, I: 1  
 Franklin, W. S. F, I: 2  
 Freeman, J. R. F, I: 4  
 French, D. C. F, III: 4  
 Frost, E. B. F, I: 1  
 Furness, H. H. F, III: 4  
 Gamble, J. L. F, II: 4  
 Gay, E. F. F, III: 3  
 Geldner, K. F. FHM, III: 2  
 Gillespie, L. J. F, I: 3  
 Goldschmidt, V. F, II: 1  
 Goldthwait, J. W. F, II: 1  
 Gooch, F. A. F, I: 3  
 Goodale, J. L. F, II: 4  
 Goodnow, F. J. F, III: 3  
 Goodrich, W. F, III: 4  
 Goodwin, H. M. F, I: 2  
 Gordon, G. A. F, III: 1  
 Grandgent, C. H. F, III: 2  
 Grant, R. F, III: 4  
 Graton, L. C. F, II: 1  
 Graustein, W. C. F, I: 1  
 Gray, L. H. F, III: 2  
 Gray, M. F, III: 4  
 Greene, E. B. F, III: 3  
 Greene, W. C. F, III: 2  
 Greenough, C. N. F, III: 4  
 Greenough, R. B. F, II: 4  
 Gregory, H. E. F, II: 1  
 Gulick, C. B. F, III: 2  
 Guy, H. FHM, III: 2  
 Haber, F. FHM, I: 3  
 Hack, R. K. F, III: 2  
 Hadamard, J. S. FHM, I: 1

Hadley, A. T. F, III: 3  
 Hale, G. E. F, I: 2  
 Hall, E. H. F, I: 2  
 Hall, H. M. F, II: 2  
 Hammond, J. H. F, I: 4  
 Hardy, G. H. FHM, I: 1  
 Haring, C. H. F, III: 3  
 Harnack, A. FHM, III: 3  
 Harper, R. A. F, II: 2  
 Harrison, R. G. F, II: 4  
 Hart, A. B. F, III: 3  
 Hart, F. R. A  
 Haskins, C. H. F, III: 3  
 Hayes, H. V. F, I: 2  
 Hazen, C. D. F, III: 3  
 Heidel, W. A. F, III: 2  
 Heim, A. FHM, II: 1  
 Henderson, L. J. F, I: 3  
 Hendrickson, G. L. F, III: 2  
 Henshaw, S. F, II: 3  
 Hertzprung, E. FHM, I: 1  
 Hill, B. H. F, III: 2  
 Hills, E. C. F, III: 2  
 Hitchcock, A. S. F, II: 2  
 Hitchcock, F. L. F, I: 1  
 Hocking, W. E. F, III: 1  
 Holcombe, A. N. F, III: 3  
 Hollis, I. N. F, I: 4  
 Holmes, E. J. A  
 Holmes, S. J. F, II: 3  
 Holmes, W. H. F, III: 2  
 Hooton, E. A. F, III: 2  
 Hopkins, E. W. F, III: 2  
 Hopkinson, C. F, III: 4  
 Hoskins, R. G. F, II: 3  
 Hovgaard, W. F, I: 4  
 Howard, L. O. F, II: 3  
 Howard, W. G. F, III: 2  
 Howe, M. A. DeW. F, III: 4  
 Howe, P. R. F, II: 4  
 Howell, W. H. F, II: 4  
 Hrdlicka, A. F, III: 2  
 Hubbard, J. C. F, I: 2  
 Hughes, C. E. F, III: 1  
 Hughes, H. J. F, I: 4  
 Hull, G. F. F, I: 2  
 Humphreys, W. J. F, II: 1  
 Hunt, R. F, II: 4  
 Huntington, A. M. F, III: 4  
 Huntington, E. F, II: 1  
 Huntington, E. V. F, I: 1  
 Husserl, E. FHM, III: 1  
 Hutchins, C. C. F, I: 2  
 Hyvernat, E. X. L. H. F, III: 2  
 Ives, F. E. F, I: 2  
 Ives, J. E. F, I: 2  
 Jack, J. G. F, II: 2  
 Jack, J. R. F, I: 4  
 Jackson, C. L. F, I: 3  
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 Jackson, D. C. F, I: 4  
 Jackson, F. J. F. F, III: 1  
 Jackson, H. F, II: 4  
 Jackson, R. T. F, II: 1  
 Jacobi, H. G. FHM, III: 2  
 Jacques, W. W. F, I: 2  
 Jaggar, T. A. F, II: 1  
 James, W. A  
 Jeffrey, E. C. F, II: 2  
 Jennings, H. S. F, II: 3  
 Jennings, W. L. F, I: 3  
 Jepson, W. L. F, II: 2  
 Jewett, J. R. F, III: 2  
 Joffre, J. J. C. FHM, I: 4  
 Johnson, C. W. F, II: 3  
 Johnson, D. W. F, II: 1  
 Johnson, L. J. F, I: 4  
 Johnston, I. M. F, II: 2  
 Jones, G. F, I: 3  
 Joslin, E. P. F, II: 4  
 Jusserand, J. A. A. J. FHM, III: 4  
 Keen, W. W. F, II: 4  
 Keith, A. F, II: 1  
 Kellogg, O. D. F, I: 1  
 Kemble, E. C. F, I: 2  
 Kennelly, A. E. F, I: 4  
 Kent, N. A. F, I: 2

Keyes, F. G. F, I: 3  
 Kidder, A. V. F, III: 2  
 Kidder, N. T. A  
 King, E. S. F, I: 1  
 Kipling, R. FHM, III: 4  
 Kittredge, G. L. F, III: 4  
 Knudson, A. C. F, III: 1  
 Köhler, W. FHM, II: 3  
 Kofoid, C. A. F, II: 3  
 Kohler, E. P. F, I: 3  
 Kraus, C. A. F, I: 3  
 Kroeker, A. L. F, III: 2  
 Lake, K. F, III: 2  
 Laloux, V. FHM, III: 4  
 Lamb, A. B. F, I: 3  
 Lambert, F. D. F, II: 2  
 Lampland, C. O. F, I: 1  
 Lane, A. C. F, II: 1  
 Lane, W. C. F, III: 4  
 Lang, H. R. F, III: 2  
 Langmuir, I. F, I: 3  
 Lankester, Sir E. R. FHM, II: 3  
 Lanman, C. R. F, III: 2  
 La Piana, G. F, III: 3  
 Larmor, Sir J. FHM, I: 2  
 Larsen, E. S. F, II: 1  
 Lawrence, W. F, III: 1  
 Lawrence, W. H. F, I: 4  
 Laws, F. A. F, I: 2  
 Lawson, A. C. F, II: 1  
 Lawton, F. F, III: 1  
 Le Chatelier, H. L. FHM, I: 3  
 Lee, R. I. F, II: 4  
 Lefavour, H. F, I: 2  
 Leith, C. K. F, II: 1  
 Levi-Civita, T. FHM, I: 1  
 Lewis, F. T. F, II: 3  
 Lewis, G. N. F, I: 3  
 Lewis, W. K. F, I: 3  
 Lillie, R. S. F, II: 3  
 Lindgren, W. F, II: 1  
 Lipman, J. G. F, II: 2  
 Little, A. D. F, I: 3  
 Livingston, B. E. F, II: 2  
 Lodge, J. E. F, III: 4  
 Loeffler, C. M. T. F, III: 4  
 Longcope, W. T. F, II: 4  
 Loomis, F. B. F, II: 1  
 Loring, W. C. F, III: 1  
 Lowell, A. L. F, III: 3  
 Lowes, J. L. F, III: 4  
 Lull, R. S. F, II: 3  
 Luyten, W. J. F, I: 1  
 Lyman, T. F, I: 2  
 Lyon, D. G. F, III: 2  
 McAdie, A. G. F, II: 1  
 MacDonald, W. F, III: 3  
 Macdonell, A. A. FHM, III: 2  
 McDougall, W. F, III: 1  
 McIlwain, C. H. F, III: 3  
 MacInnes, D. A. F, I: 3  
 McLaughlin, D. H. F, II: 1  
 Maginnis, C. D. F, III: 4  
 Main, C. T. F, I: 4  
 Mallory, F. B. F, II: 4  
 Margerie, E. de. FHM, II: 1  
 Mark, E. L. F, II: 3  
 Marks, L. S. F, I: 4  
 Martin, E. G. F, II: 3  
 Mather, K. F. F, II: 1  
 Mathews, E. B. F, II: 1  
 Matthews, A. F, III: 4  
 Maudslay, A. P. FHM, III: 2  
 Mayo, W. J. F, II: 4  
 Mead, A. D. F, II: 3  
 Means, J. H. F, II: 4  
 Melander, A. L. F, II: 3  
 Merriam, J. C. F, II: 1  
 Merrill, E. D. F, II: 2  
 Merriman, R. B. F, III: 3  
 Merritt, E. G. F, I: 2  
 Michelson, A. A. F, I: 2  
 Miller, D. C. F, I: 2  
 Miller, E. F. F, I: 4  
 Miller, G. A. F, I: 1  
 Miller, G. S. F, II: 3  
 Miller, J. A. F, I: 1  
 Miller, W. J. F, II: 1

Millikan, R. A. F, I: 2  
 Minot, G. R. F, II: 4  
 Mitchell, S. A. F, I: 1  
 Miyajima, M. FHM, II: 4  
 Molengraaff, G. A. F. FHM, II: 1  
 Moore, C. H. F, III: 2  
 Moore, C. L. E. F, I: 1  
 Moore, E. C. F, III: 1  
 Moore, E. H. F, I: 1  
 Moore, G. D. F, I: 3  
 Moore, G. F. F, III: 2  
 Moore, J. B. F, III: 1  
 Morgan, T. H. F, II: 3  
 Morison, S. E. F, III: 3  
 Morley, F. F, I: 1  
 Morse, H. W. F, I: 2  
 Mors, E. A  
 Moss, W. L. F, II: 4  
 Moulton, F. R. F, I: 1  
 Mueller, E. F, I: 3  
 Müller, F. von. FHM, II: 4  
 Mueller, J. H. F, II: 4  
 Mulliken, S. P. F, I: 3  
 Munro, W. B. F, III: 3  
 Munroe, C. E. F, I: 3  
 Murdock, H. F, III: 4  
 Murray, G. FHM, III: 4  
 Neal, H. V. F, II: 3  
 Neilson, W. A. F, III: 4  
 Nichols, C. L. F, III: 3  
 Nichols, E. L. F, I: 2  
 Nitze, W. A. F, III: 2  
 Norris, J. F. F, I: 3  
 Norton, C. L. F, I: 2  
 Noyes, A. A. F, I: 3  
 Noyes, W. A. F, I: 3  
 Nuttall, G. H. F. FHM, II: 3  
 O'Brien, R. L. A  
 d'Ocagne, M. FHM, I: 4  
 O'Connor, J. F, I: 4  
 Oertel, H. FHM, III: 2  
 Olmsted, F. L. F, I: 4  
 Osborn, H. F. F, II: 3  
 Osgood, R. B. F, II: 4  
 Ostenfelt, C. H. FHM, II: 2  
 Osterhout, W. J. V. F, II: 2  
 Ostwald, W. FHM, I: 3  
 Page, C. H. F, III: 4  
 Palache, C. F, II: 1  
 Palmer, G. H. F, III: 1  
 Park, C. E. F, III: 1  
 Park, C. F. F, I: 4  
 Parker, G. H. F, II: 3  
 Parks, L. F, III: 1  
 Parsons, W. B. F, I: 4  
 Paschen, F. FHM, I: 2  
 Patten, W. F, II: 3  
 Peabody, F. G. F, III: 1  
 Pearl, R. F, II: 3  
 Pearse, L. F, I: 4  
 Pearson, K. FHM, III: 3  
 Peirce, G. J. F, II: 2  
 Pender, H. F, I: 4  
 Pepper, G. W. F, III: 1  
 Perkin, W. H. FHM, I: 3  
 Perkins, T. N. A  
 Perry, R. B. F, III: 1  
 Persons, W. M. F, III: 3  
 Peters, A. J. A  
 Phelps, W. L. F, III: 4  
 Phillips, H. B. F, I: 1  
 Phillips, J. C. F, II: 3  
 Philpott, A. J. A  
 Picard, C. E. FHM, I: 1  
 Pickering, W. H. F, I: 1  
 Pidal, R. M. FHM, III: 3  
 Pier, A. S. A  
 Pierce, G. W. F, I: 2  
 Pigou, A. C. FHM, III: 3  
 Pilsbry, H. A. F, II: 3  
 Pirenne, H. FHM, III: 3  
 Planck, M. FHM, I: 2  
 Poincaré, R. FHM, III: 1  
 Pollock, Sir F. FHM, III: 1  
 Poor, C. L. F, I: 1  
 Porter, A. K. F, III: 4  
 Post, C. R. F, III: 2  
 Pound, R. F, III: 1

Pratt, F. H. F, II: 3  
 Pratt, J. H. F, II: 4  
 Prescott, S. C. F, I: 3  
 Pupin, M. I. F, I: 2  
 Putnam, H. F, III: 4  
 Rabaud, H. FHM, III: 4  
 Rand, E. K. F, III: 2  
 Rand, H. W. F, II: 3  
 Raymond, P. E. F, II: 1  
 Redfield, A. C. F, II: 3  
 Redlich, J. FHM, III: 1  
 Regan, C. T. FHM, II: 3  
 Rehder, A. F, II: 2  
 Reisner, G. A. F, III: 2  
 Rendle, A. B. FHM, II: 2  
 Richards, R. H. F, I: 3  
 Richardson, R. G. D. F, I: 1  
 Richardson, W. L. F, II: 4  
 Ripley, A. L. A  
 Ritter, W. E. F, II: 3  
 Roberts, O. A  
 Robinson, B. L. F, II: 2  
 Robinson, E. F, III: 2  
 Robinson, E. A. F, III: 4  
 Robinson, F. N. F, III: 2  
 Rogers, A. F. F, II: 1  
 Root, E. F, III: 1  
 Ropes, J. H. F, III: 1  
 Rosanoff, M. A. F, I: 3  
 Rosenau, M. J. F, II: 4  
 Ross, D. W. F, III: 4  
 Rostovtzeff, M. I. F, III: 3  
 Rowe, A. W. F, I: 3  
 Rugg, A. P. F, III: 1  
 Russell, H. N. F, I: 1  
 Rutherford, Sir E. FHM, I: 2  
 Ruthven, A. G. F, II: 3  
 Sachs, P. J. F, III: 4  
 Sarton, G. F, III: 1  
 Saunders, F. A. F, I: 2  
 Sauveur, A. F, I: 4  
 Sayles, R. W. F, II: 1  
 Scatchard, G. F, I: 3  
 Schaller, W. T. F, II: 1  
 Schevill, R. F, III: 2  
 Schlesinger, A. M. F, III: 3  
 Schlesinger, F. F, I: 1  
 Schuchert, C. F, II: 1  
 Scott, A. W. F, III: 1  
 Scott, W. B. F, II: 1  
 Sedgwick, E. F, III: 4  
 Sedgwick, H. D. F, III: 4  
 Sellards, A. W. F, II: 4  
 Setchell, W. A. F, II: 2  
 Seymour, A. B. F, II: 2  
 Shapley, H. F, I: 1  
 Shaw, Sir W. N. FHM, II: 1  
 Shepherd, F. J. FHM, II: 4  
 Sherrill, M. S. F, I: 3  
 Sherrington, Sir C. S. FHM, II: 4  
 Shimer, H. W. F, II: 1  
 Slater, J. C. F, I: 2  
 Slipher, V. M. F, I: 1  
 Slocum, F. F, I: 1  
 Smith, H. M. F, I: 3  
 Smith, J., Jr. A  
 Smith, P. A  
 Smith, T. F, II: 4  
 Smyth, H. L. F, I: 4  
 Smyth, H. W. F, III: 2  
 Snyder, V. F, I: 1  
 Sörensen, S. P. L. FHM, I: 3  
 Sperry, W. L. F, III: 1  
 Spinden, H. J. F, III: 2  
 Spofford, C. M. F, I: 4  
 Stakman, E. C. F, II: 2  
 Stebbins, J. F, I: 1  
 Stephenson, F. B. F, III: 2  
 Stetson, H. T. F, I: 1  
 Stevens, J. F. F, I: 4  
 Stieglitz, J. O. F, I: 3  
 Stiles, C. W. F, II: 4  
 Stiles, P. G. F, II: 3  
 Stone, J. S. F, I: 2  
 Storey, M. F, III: 1  
 Story, W. E. F, I: 1  
 Stratton, S. W. F, I: 4  
 Strong, R. P. F, II: 4

Sturgis, R. C. F, III: 4  
 Sturgis, W. C. F, II: 2  
 Sumner, J. O. F, III: 3  
 Swain, G. F. F, I: 4  
 Taber, H. F, I: 1  
 Taft, W. H. F, III: 1  
 Tamarkin, J. D. F, I: 1  
 Tarbell, E. C. F, III: 4  
 Taussig, F. W. F, III: 3  
 Taylor, C. H. A  
 Taylor, E. W. F, II: 4  
 Taylor, F. B. F, II: 1  
 Terzaghi, C. F, I: 4  
 Thaxter, R. F, II: 2  
 Thayer, J. E. F, II: 3  
 Thayer, W. S. F, II: 4  
 Thompson, D'A. W. FHM, II: 3  
 Thompson, M. deK. F, I: 2  
 Thomson, E. F, I: 2  
 Thomson, Sir J. J. FHM, I: 2  
 Timonoff, V. E. FHM, I: 4  
 Tolman, R. C. F, I: 3  
 Torrey, C. C. F, III: 2  
 Tozzer, A. M. F, III: 2  
 Trelease, W. F, II: 2  
 Trevelyan, Sir G. O. FHM, III: 3  
 Turner, F. J. F, III: 3  
 Tyler, H. W. F, I: 1  
 Tyzzer, E. E. F, II: 4  
 Unwin, W. C. FHM, I: 4  
 Urban, I. FHM, II: 2  
 Vallarta, M. S. F, I: 2  
 Vallée Poussin, C. J. de la. FHM, I: 1  
 Van Tyne, C. H. F, III: 3  
 Vaughan, T. W. F, II: 1  
 Veblen, O. F, I: 1  
 Verhoeff, F. H. F, II: 4  
 Vogt, J. H. L. FHM, II: 1  
 Vries, H. de. FHM, II: 2  
 Wadsworth, E. A  
 Wait, W. C. F, III: 1  
 Walcott, H. P. F, II: 4  
 Walker, C. H. F, III: 4  
 Walker, W. H. F, I: 3  
 Wambaugh, E. F, III: 1  
 Ward, R. De C. F, II: 1  
 Warner, E. P. F, I: 4  
 Warner, L. F, III: 2  
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 Warren, W. F, III: 1  
 Washburn, H. B. F, III: 1  
 Watson, J. B. F, II: 3  
 Wearn, J. T. F, II: 4  
 Webster, D. L. F, I: 2  
 Webster, E. S. A  
 Welch, W. H. F, II: 4  
 Weston, R. S. F, I: 4  
 Weston, W. H. F, II: 2  
 Weysser, A. W. F, II: 3  
 Wettstein, R. FHM, II: 2  
 Whatmough, J. F, III: 2  
 Wheeler, W. M. F, II: 3  
 White, B. F, II: 4  
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 Whitehead, A. N. F, I: 1  
 Whitlock, H. P. F, II: 1  
 Whitman, E. A. A  
 Whitney, W. R. F, I: 3  
 Williams, F. H. F, II: 4  
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 Willis, B. F, II: 1  
 Williston, S. F, III: 1  
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 Wilson, E. B. F, II: 3  
 Wilson, E. B. F, I: 2  
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 Winship, G. P. F, III: 3  
 Winslow, A. F, II: 1  
 Wissler, C. F, III: 2  
 Wister, O. F, III: 4  
 Wolbach, S. B. F, II: 4  
 Wolff, J. E. F, II: 1  
 Wood, H. C. F, II: 4  
 Wood, R. W. F, I: 2  
 Woodberry, G. E. F, III: 4  
 Woodman, A. G. F, I: 3  
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 Woods, F. S. F, I: 1

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Wright, C. H. C. F, III: 4  
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## STATUTES AND STANDING VOTES.

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### STATUTES.

*Adopted November 8, 1911: amended May 8, 1912, January 8, and May 14, 1913, April 14, 1915, April 12, 1916, April 10, 1918, May 14, 1919, February 8, April 12, and December 13, 1922, February 14, March 14, and October 10, 1923, and March 10, 1926, and May 9, 1928.*

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### CHAPTER I.

#### THE CORPORATE SEAL.

ARTICLE 1. The Corporate Seal of the Academy shall be as here depicted:



ARTICLE 2. The Recording Secretary shall have the custody of the Corporate Seal.

*See Chap. v, art. 3; chap. vi, art. 2.*

## CHAPTER II.

## FELLOWS AND FOREIGN HONORARY MEMBERS AND DUES.

ARTICLE 1. The Academy consists of Fellows, who are either citizens or residents of the United States of America, and Foreign Honorary Members. They are arranged in three Classes, according to the Arts and Sciences in which they are severally proficient, and each Class is divided into four Sections, namely:

**CLASS I. *The Mathematical and Physical Sciences***

- Section 1. Mathematics and Astronomy
- Section 2. Physics
- Section 3. Chemistry
- Section 4. Technology and Engineering

**CLASS II. *The Natural and Physiological Sciences***

- Section 1. Geology, Mineralogy, and Physics of the Globe
- Section 2. Botany
- Section 3. Zoölogy and Physiology
- Section 4. Medicine and Surgery

**CLASS III. *The Moral and Political Sciences***

- Section 1. Theology, Philosophy, and Jurisprudence
- Section 2. Philology and Archaeology
- Section 3. Political Economy and History
- Section 4. Literature and the Fine Arts

ARTICLE 2. The number of Fellows shall not exceed Six hundred, of whom not more than Four hundred shall be residents of Massachusetts, nor shall there be more than Two hundred and ten in any one Class.

ARTICLE 3. The number of Foreign Honorary Members shall not exceed One hundred. They shall be chosen from among citizens of foreign countries most eminent for their discoveries and attainments in any of the Classes above enumerated. There shall not be more than Thirty-five in any one Class.

ARTICLE 4. If any person, after being notified of his election as Fellow, shall neglect for six months to accept in writing, or, if a Fellow resident within fifty miles of Boston shall neglect to pay his Admission Fee, his election shall be void; and if any Fellow resident within fifty miles of Boston shall neglect to pay his Annual Dues for six months after they are due, provided his attention shall have been called to this Article of the Statutes in the meantime, he shall cease to be a Fellow; but the Council may suspend the provisions of this Article for a reasonable time.

With the previous consent of the Council, the Treasurer may dispense (*sub silentio*) with the payment of the Admission Fee or of the Annual Dues or both whenever he shall deem it advisable. In the case of officers of the Army or Navy who are out of the Commonwealth on duty, payment of the Annual Dues may be waived during such absence if continued during the whole financial year and if notification of such expected absence be sent to the Treasurer. Upon similar notification to the Treasurer, similar exemption may be accorded to Fellows subject to Annual Dues, who may temporarily remove their residence for at least two years to a place more than fifty miles from Boston.

If any person elected a Foreign Honorary Member shall neglect for six months after being notified of his election to accept in writing, his election shall be void.

*See Chap. vii, art. 2.*

ARTICLE 5. Every Fellow resident within fifty miles of Boston hereafter elected shall pay an Admission Fee of Ten dollars.

Every Fellow resident within fifty miles of Boston shall, and others may, pay such Annual Dues, not exceeding Fifteen dollars, as shall be voted by the Academy at each Annual Meeting, when they shall become due; but any Fellow shall be exempt from the annual payment if, at any time after his admission, he shall pay into the treasury Two hundred dollars in addition to his previous payments. Any Fellow shall also be exempt from Annual Dues who has paid such dues for forty years, or, having attained the age of seventy-five has paid dues for twenty-five years.

All Commutations of the Annual Dues shall be and remain permanently funded, the interest only to be used for current expenses.

Any fellow not previously subject to Annual Dues who takes up his residence within fifty miles of Boston, shall pay to the Treasurer within three months thereafter Annual Dues for the current year, failing which his Fellowship shall cease; but the Council may suspend the provisions of this Article for a reasonable time.

Only Fellows who pay Annual Dues or have commuted them may hold office in the Academy or serve on the Standing Committees or vote at meetings.

**ARTICLE 6.** Fellows who pay or have commuted the Annual Dues and Foreign Honorary Members shall be entitled to receive gratis one copy of all Publications of the Academy issued after their election.

*See Chap. xi, art. 2.*

**ARTICLE 7.** Diplomas signed by the President and the Vice-President of the Class to which the member belongs, and countersigned by the Secretaries, shall be given to Foreign Honorary Members and to Fellows on request.

**ARTICLE 8.** If, in the opinion of a majority of the entire Council, any Fellow or Foreign Honorary Member shall have rendered himself unworthy of a place in the Academy, the Council shall recommend to the Academy the termination of his membership; and if three-fourths of the Fellows present, out of a total attendance of not less than fifty at a Stated Meeting, or at a Special Meeting called for the purpose, shall adopt this recommendation, his name shall be stricken from the Roll.

*See Chap. iii; chap. vi, art. 1; chap. x, art. 1, 7; chap. xi, art. 2.*

### CHAPTER III.

#### ELECTION OF FELLOWS AND FOREIGN HONORARY MEMBERS

The procedure in the election of Fellows and Foreign Honorary Members shall be as follows:

Nominations to Fellowship or Foreign Honorary Membership in any Section must be signed by two Fellows of that Section, or by three Fellows of any Sections, and sent to the Corresponding Secretary ac-

companied by a statement of the qualifications of the nominee and brief biographical data.

Notice shall be sent to every Fellow not later than the fifteenth of January in each year, reminding him that all nominations must be in the hands of the Corresponding Secretary before the fifteenth of February following.

A list of the nominees, giving a brief account of each, with the names of the nominators, shall be sent to every Fellow with a request that he return the list with such confidential comments and indications of preference as he may choose to make.

All the nominations, with any comments thereon and with expressions of preference on the part of the Fellows, shall be referred to the appropriate Class Committees, which shall canvass them, and report their recommendations in writing to the Council before the Stated Meeting of the Academy in April.

Elections of Fellows and Foreign Honorary Members shall be made by the Council before the Annual Meeting in May, and announced at that meeting.

Persons nominated in any year, but not elected, may be carried over to the list of nominees for the next year at the discretion of the Council, but shall not be further continued unless renominated.

*See Chap. ii; chap. vi, art. 1; chap. x, art. 1.*

## CHAPTER IV.

### OFFICERS.

ARTICLE 1. The Officers of the Academy shall be a President (who shall be Chairman of the Council), three Vice-Presidents (one from each Class), a Corresponding Secretary (who shall be Secretary of the Council), a Recording Secretary, a Treasurer, a Librarian, and an Editor, all of whom shall be elected by ballot at the Annual Meeting, and shall hold their respective offices for one year, and until others are duly chosen and installed.

There shall be also twelve Councillors, one from each Section of each Class. At each Annual Meeting three Councillors, one from each Class, shall be elected by ballot to serve for the full term of four

years and until others are duly chosen and installed. The same Fellow shall not be eligible for two successive terms.

The Councillors, with the other officers previously named, and the Chairman of the House Committee, *ex officio*, shall constitute the Council.

*See Chap. xi, art. 1.*

**ARTICLE 2.** If any officer be unable, through death, absence, or disability, to fulfil the duties of his office, or if he shall resign, his place may be filled by the Council in its discretion for any part or the whole of the unexpired term.

**ARTICLE 3.** At the Stated Meeting in March, the President shall appoint a Nominating Committee of three Fellows having the right to vote, one from each Class. This Committee shall prepare a list of nominees for the several offices to be filled, and for the Standing Committees, and file it with the Recording Secretary not later than four weeks before the Annual Meeting.

*See Chap. vi, art. 2.*

**ARTICLE 4.** Independent nominations for any office, if signed by at least twenty Fellows having the right to vote, and received by the Recording Secretary not less than ten days before the Annual Meeting, shall be inserted in the call therefor, and shall be mailed to all the Fellows having the right to vote.

*See Chap. vi, art. 2.*

**ARTICLE 5.** The Recording Secretary shall prepare for use in voting at the Annual Meeting a ballot containing the names of all persons duly nominated for office.

## CHAPTER V.

### THE PRESIDENT.

**ARTICLE 1.** The President, or in his absence the senior Vice-President present (seniority to be determined by length of continuous fellowship in the Academy), shall preside at all meetings of the Acad-

emy. In the absence of all these officers, a Chairman of the meeting shall be chosen by ballot.

ARTICLE 2. Unless otherwise ordered, all Committees which are not elected by ballot shall be appointed by the presiding officer.

ARTICLE 3. Any deed or writing to which the Corporate Seal is to be affixed, except leases of real estate, shall be executed in the name of the Academy by the President or, in the event of his death, absence, or inability, by one of the Vice-Presidents, when thereto duly authorized.

*See Chap. ii, art. 7; chap. iv, art. 1, 3; chap. vi, art. 2; chap. vii, art. 1; chap. x, art. 6; chap. xi, art. 1, 2; chap. xii, art. 1.*

## CHAPTER VI.

### THE SECRETARIES.

ARTICLE 1. The Corresponding Secretary shall conduct the correspondence of the Academy and of the Council, recording or making an entry of all letters written in its name, and preserving for the files all official papers which may be received. At each meeting of the Council he shall present the communications addressed to the Academy which have been received since the previous meeting, and at the next meeting of the Academy he shall present such as the Council may determine.

He shall notify all persons who may be elected Fellows or Foreign Honorary Members, send to each a copy of the Statutes, and on their acceptance issue the proper Diploma. He shall also notify all meetings of the Council; and in case of the death, absence, or inability of the Recording Secretary he shall notify all meetings of the Academy.

Under the direction of the Council, he shall keep a List of the Fellows and Foreign Honorary Members, arranged in their several Classes and Sections. It shall be printed annually and issued as of the first day of July.

*See Chap. ii, art. 7; chap. iii, art. 2, 3; chap. iv, art. 1; chap. x, art. 6; chap. xi, art. 1; chap. xii, art. 1.*

ARTICLE 2. The Recording Secretary shall have the custody of the Charter, Corporate Seal, Archives, Statute-Book, Journals, and all literary papers belonging to the Academy.

Fellows borrowing such papers or documents shall receipt for them to their custodian.

The Recording Secretary shall attend the meetings of the Academy and keep a faithful record of the proceedings with the names of the Fellows present; and after each meeting is duly opened, he shall read the record of the preceding meeting.

He shall notify the meetings of the Academy to each Fellow and by mail at least seven days beforehand, and in his discretion may also cause the meetings to be advertised; he shall apprise Officers and Committees of their election or appointment, and inform the Treasurer of appropriations of money voted by the Academy.

After all elections, he shall insert in the Records the names of the Fellows by whom the successful nominees were proposed.

He shall send the Report of the Nominating Committee in print to every Fellow having the right to vote at least three weeks before the Annual Meeting.

*See Chap. iv, art. 3.*

In the absence of the President and of the Vice-Presidents he shall, if present, call the meeting to order, and preside until a Chairman is chosen.

*See Chap. i; chap. ii, art. 7; chap. iv, art. 3, 4, 5; chap. x, art. 6; chap. xi, art. 1, 2; chap. xii, art. 1, 3.*

**ARTICLE 3.** The Secretaries, with the Editor, shall have authority to publish such of the records of the meetings of the Academy as may seem to them likely to promote its interests.

## CHAPTER VII.

### THE TREASURER AND THE TREASURY.

**ARTICLE 1.** The Treasurer shall collect all money due or payable to the Academy, and all gifts and bequests made to it. He shall pay all bills due by the Academy, when approved by the proper officers, except those of the Treasurer's office, which may be paid without such approval; in the name of the Academy he shall sign all leases of real estate; and, with the written consent of a member of the Committee

on Finance, he shall make all transfers of stocks, bonds, and other securities belonging to the Academy, all of which shall be in his official custody.

He shall keep a faithful account of all receipts and expenditures, submit his accounts annually to the Auditing Committee, and render them at the expiration of his term of office, or whenever required to do so by the Academy or the Council.

He shall keep separate accounts of the income of the Rumford Fund, and of all other special Funds, and of the appropriation thereof, and render them annually.

His accounts shall always be open to the inspection of the Council.

**ARTICLE 2.** He shall report annually to the Council at its March meeting on the expected income of the various Funds and from all other sources during the ensuing financial year. He shall also report the names of all Fellows who may be then delinquent in the payment of their Annual Dues.

**ARTICLE 3.** He shall give such security for the trust reposed in him as the Academy may require.

**ARTICLE 4.** With the approval of a majority of the Committee on Finance, he may appoint an Assistant Treasurer to perform his duties, for whose acts, as such assistant, he shall be responsible; or, with like approval and responsibility, he may employ any Trust Company doing business in Boston as his agent for the same purpose, the compensation of such Assistant Treasurer or agent to be fixed by the Committee on Finance and paid from the Funds of the Academy.

**ARTICLE 5.** At the Annual Meeting he shall report in print all his official doings for the preceding year, stating the amount and condition of all the property of the Academy entrusted to him, and the character of the investments.

**ARTICLE 6.** The Financial Year of the Academy shall begin with the first day of April.

**ARTICLE 7.** No person or committee shall incur any debt or liability in the name of the Academy, unless in accordance with a

previous vote and appropriation therefor by the Academy or the Council, or sell or otherwise dispose of any property of the Academy, except cash or invested funds, without previous consent and approval of the Council.

*See Chap. ii, art. 4, 5; chap. vi, art. 2; chap. x, art. 6; chap. xi, art. 1, 2, 3; chap. xii, art. 1.*

## CHAPTER VIII.

### THE LIBRARIAN AND THE LIBRARY.

ARTICLE 1. The Librarian shall have charge of the printed books, keep a correct catalogue thereof, and provide for their delivery from the Library.

At the Annual Meeting, as Chairman of the Committee on the Library, he shall make a Report on its condition.

ARTICLE 2. In conjunction with the Committee on the Library he shall have authority to expend such sums as may be appropriated by the Academy for the purchase of books, periodicals, etc., and for defraying other necessary expenses connected with the Library.

ARTICLE 3. All books procured from the income of the Rumford Fund or of other special Funds shall contain a book-plate expressing the fact.

ARTICLE 4. Books taken from the Library shall be received for to the Librarian or his assistant.

ARTICLE 5. Books shall be returned in good order, regard being had to necessary wear with good usage. If any book shall be lost or injured, the Fellow to whom it stands charged shall replace it by a new volume or by a new set, if it belongs to a set, or pay the current price thereof to the Librarian, whereupon the remainder of the set, if any, shall be delivered to the Fellow so paying, unless such remainder be valuable by reason of association.

ARTICLE 6. All books shall be returned to the Library for examination at least one week before the Annual Meeting.

**ARTICLE 7.** The Librarian shall have the custody of the Publications of the Academy. With the advice and consent of the President, he may effect exchanges with other associations.

*See Chap. ii, art. 6; chap. xi, art. 1, 2.*

## CHAPTER IX.

### THE EDITOR AND THE PUBLICATIONS.

**ARTICLE 1.** The Editor shall have charge of the conduct through the press of the Proceedings and the Memoirs, and all correspondence relative thereto, and shall have power to fix the price at which individual numbers of the Proceedings and Memoirs are sold.

**ARTICLE 2.** In conjunction with the Committee of Publication, he shall have authority to expend such sums as may be appropriated by the Academy for printing the publications and for defraying other expenses therewith connected.

**ARTICLE 3.** All publications which are financed in whole or in part from the income of the Rumford Fund or from the income of other special funds, and all publications of work done with the aid of the Rumford Fund or other special funds, shall contain a conspicuous statement of this fact.

**ARTICLE 4.** Two hundred extra copies of each paper printed in the Proceedings or Memoirs shall be placed at the disposal of the author without charge.

If, on account of the number of communications offered for publication, it shall be necessary to decline for publication communications otherwise acceptable, members of the Academy shall be given preference in each of the several Classes over non-members; but whenever it shall be necessary to exercise this preference, the Editor shall inform the Council of the fact.

*See Chap. iv, art. 1; chap. vi, art. 3; chap. x, art. 6; chap. xi, art. 4.*

## CHAPTER X.

## THE COUNCIL.

**ARTICLE 1.** The Council shall exercise a discreet supervision over all nominations and elections to membership, and in general supervise all the affairs of the Academy not explicitly reserved to the Academy as a whole or entrusted by it or by the Statutes to standing or special committees.

It shall consider all nominations duly sent to it by any Class Committee, and act upon them in accordance with the provisions of Chapter III.

With the consent of the Fellow interested, it shall have power to make transfers between the several Sections, reporting its action to the Academy.

*See Chap. iii, art. 2, 3; chap. xi, art. 1.*

**ARTICLE 2.** Seven members shall constitute a quorum.

**ARTICLE 3.** It shall establish rules and regulations for the transaction of its business, and provide all printed and engraved blanks and books of record.

**ARTICLE 4.** It shall act upon all resignations of officers, and all resignations and forfeitures of Fellowship; and cause the Statutes to be faithfully executed.

It shall appoint all agents and subordinates not otherwise provided for by the Statutes, prescribe their duties, and fix their compensation. They shall hold their respective positions during the pleasure of the Council.

**ARTICLE 5.** It may appoint, for terms not exceeding one year, and prescribe the functions of, such committees of its number, or of the Fellows of the Academy, as it may deem expedient, to facilitate the administration of the affairs of the Academy or to promote its interests.

**ARTICLE 6.** At its March meeting it shall receive reports from the President, the Secretaries, the Treasurer, and the Standing Commit-

tees, on the appropriations severally needed for the ensuing financial year. At the same meeting the Treasurer shall report on the expected income of the various Funds and from all other sources during the same year.

A report from the Council shall be submitted to the Academy, for action, at the March meeting, recommending the appropriation which in the opinion of the Council should be made.

On the recommendation of the Council, special appropriations may be made at any Stated Meeting of the Academy, or at a Special Meeting called for the purpose.

*See Chap. xi, art. 3.*

**ARTICLE 7.** After the death of a Fellow or Foreign Honorary Member, it shall appoint a member of the Academy to prepare a biographical notice for publication in the Proceedings.

**ARTICLE 8.** It shall report at every meeting of the Academy such business as it may deem advisable to present.

*See Chap. ii, art. 4, 5, 8; chap. iv, art. 1, 2; chap. vi, art. 1; chap. vii, art. 1; chap. xii, art. 1, 4.*

## CHAPTER XI.

### STANDING COMMITTEES.

**ARTICLE 1.** The Class Committee of each Class shall consist of the Vice-President, who shall be chairman, and the four Councillors of the Class, together with such other officer or officers annually elected as may belong to the Class. It shall consider nominations to Fellowship in its own Class, and report in writing to the Council such as may receive at a Class Committee Meeting a majority of the votes cast, provided at least three shall have been in the affirmative.

*See Chap. iii, art. 2.*

**ARTICLE 2.** At the Annual Meeting the following Standing Committees shall be elected by ballot to serve for the ensuing year:

(i) *The Committee on Finance*, to consist of three Fellows, who, through the Treasurer, shall have full control and management of the

funds and trusts of the Academy, with the power of investing the funds and changing the investments thereof in their discretion.

*See Chap. iv, art. 3; chap. vii, art. 1, 4; chap. x, art. 6.*

(ii) *The Rumford Committee*, to consist of seven Fellows, who shall report to the Academy on all applications and claims for the Rumford Premium. It alone shall authorize the purchase of books, publications and apparatus at the charge of the income from the Rumford Fund, and generally shall see to the proper execution of the trust.

*See Chap. iv, art. 3; chap. x, art. 6.*

(iii) *The Cyrus Moors Warren Committee*, to consist of seven Fellows, who shall consider all applications for appropriations from the income of the Cyrus Moors Warren Fund, and generally shall see to the proper execution of the trust.

*See Chap. iv, art. 3; chap. x, art. 6.*

(iv) *The Committee of Publication*, to consist of the Editor, *ex officio*, as Chairman, and three others Fellows, one from each Class, to whom all communications submitted to the Academy for publication shall be referred, and to whom the printing of the Proceedings and the Memoirs shall be entrusted.

It shall fix the price at which volumes of the publications shall be sold; but Fellows may be supplied at half price with volumes which may be needed to complete their sets, but which they are not entitled to receive gratis.

It shall determine when the pressure of material offered for publication makes it necessary to give preference to members of the Academy as compared with non-members, or to give priority to certain members as compared with others, and to what extent this preference or priority shall be applied in each of the three Classes, to the end that a proper balance of the facilities of publication with respect to subject matter and authors may be maintained.

*See Chap. iv, art. 3; chap. vi, art. 1, 3; chap. ix; chap. x, art. 6.*

(v) *The Committee on the Library*, to consist of the Librarian, *ex officio*, as Chairman, and three other Fellows, one from each Class,

who shall examine the Library and make an annual report on its condition and management.

*See Chap. iv, art. 3; chap. viii, art. 1, 2; chap. x, art. 6.*

(vi) *The House Committee*, to consist of three Fellows, who shall have charge of all expenses connected with the House, including the general expenses of the Academy not specifically assigned to the care of other Committees or Officers.

*See Chap. iv, art. 1, 3; chap. x, art. 6.*

(vii) *The Committee on Meetings*, to consist of the President, the Recording Secretary, and three other Fellows, who shall have charge of plans for meetings of the Academy.

*See Chap. iv, art. 3; chap. x, art. 6.*

(viii) *The Auditing Committee*, to consist of two Fellows, who shall audit the accounts of the Treasurer, with power to employ an expert and to approve his bill.

*See Chap. iv, art. 3; chap. vii, art. 1; chap. x, art. 6.*

ARTICLE 3. The Standing Committees shall report annually to the Council in March on the appropriations severally needed for the ensuing financial year; and all bills incurred on account of these Committees, within the limits of the several appropriations made by the Academy, shall be approved by their respective Chairmen.

In the absence of the Chairman of any Committee, bills may be approved by any member of the Committee whom he shall designate for the purpose.

*See Chap. vii, art. 1, 7; chap. x, art. 6.*

## CHAPTER XII.

### MEETINGS, COMMUNICATIONS, AND AMENDMENTS.

ARTICLE 1. There shall be annually eight Stated Meetings of the Academy, namely, on the second Wednesday of October, November, December, January, February, March, April, and May. Only at these meetings, or at adjournments thereof regularly notified, or at

Special Meetings called for the purpose, shall appropriations of money be made or amendments of the Statutes or Standing Votes be effected.

The Stated Meeting in May shall be the Annual Meeting of the Corporation.

Special Meetings shall be called by either of the Secretaries at the request of the President, of a Vice-President, of the Council, or of ten Fellows having the right to vote; and notifications thereof shall state the purpose for which the meeting is called.

A meeting for receiving and discussing literary or scientific communications may be held on the fourth Wednesday of each month, excepting July, August, and September; but no business shall be transacted at said meetings.

ARTICLE 2. Twenty Fellows having the right to vote shall constitute a quorum for the transaction of business at Stated or Special Meetings. Fifteen Fellows shall be sufficient to constitute a meeting for literary or scientific communications and discussions.

ARTICLE 3. Upon the request of the presiding officer or the Recording Secretary, any motion or resolution offered at any meeting shall be submitted in writing.

ARTICLE 4. No report of any paper presented at a meeting of the Academy shall be published by any Fellow without the consent of the author; and no report shall in any case be published by any Fellow in a newspaper as an account of the proceedings of the Academy without the previous consent and approval of the Council. The Council, in its discretion, by a duly recorded vote, may delegate its authority in this regard to one or more of its members.

ARTICLE 5. No Fellow shall introduce a guest at any meeting of the Academy until after the business has been transacted, and especially until after the result of the balloting upon nominations has been declared.

ARTICLE 6. The Academy shall not express its judgment on literary or scientific memoirs or performances submitted to it, or included in its Publications.

ARTICLE 7. All proposed Amendments of the Statutes shall be referred to a committee, and on its report, at a subsequent Stated Meeting or at a Special Meeting called for the purpose, two-thirds of the ballot cast, and not less than twenty, must be affirmative to effect enactment.

ARTICLE 8. Standing Votes may be passed, amended, or rescinded at a Stated Meeting, or at a Special Meeting called for the purpose, by a vote of two-thirds of the members present. They may be suspended by a unanimous vote.

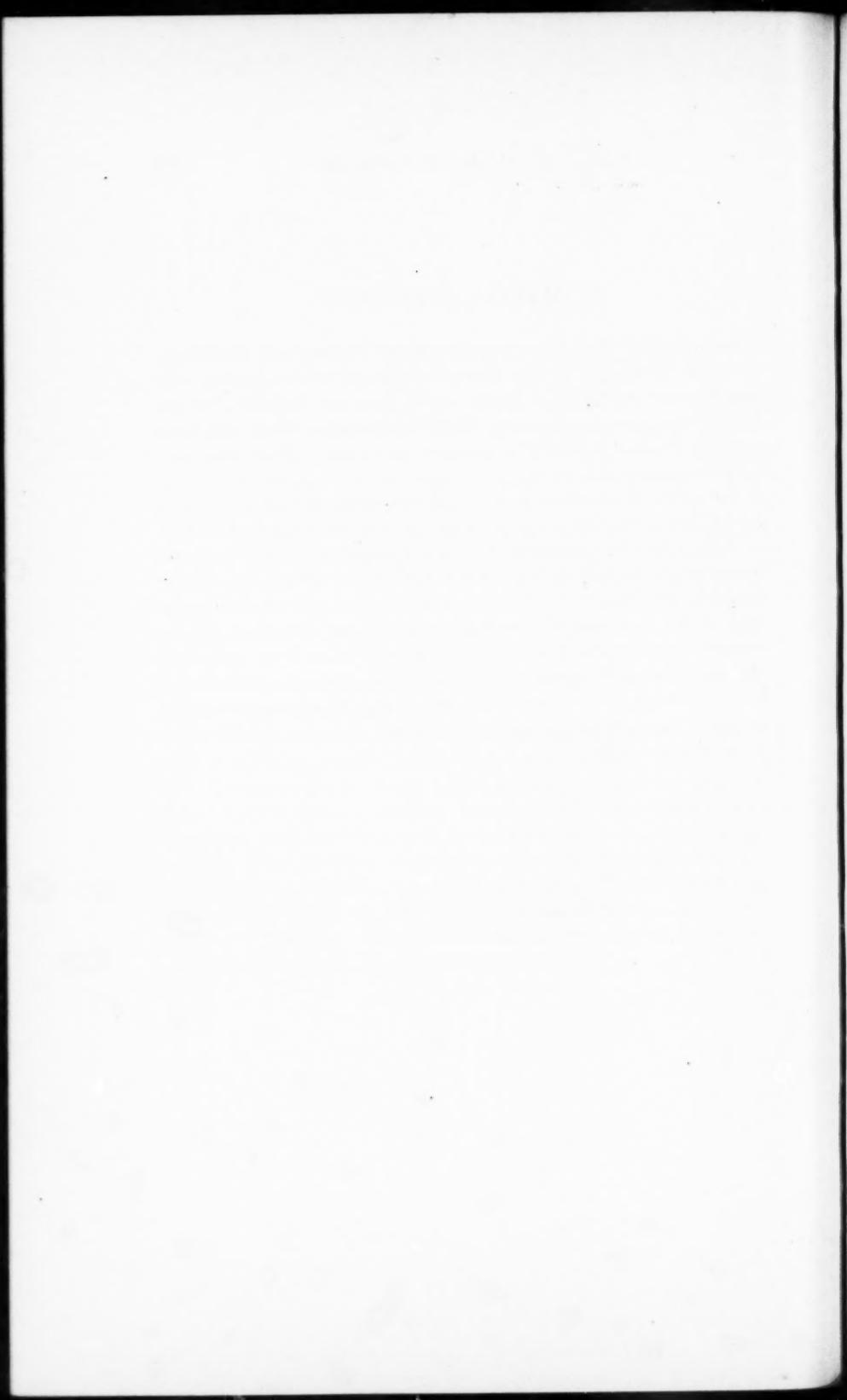
*See Chap. ii, art. 5, 8; chap. iii; chap. iv, art. 3, 4, 5; chap. v, art. 1; chap. vi, art. 1, 2; chap. x, art. 8.*

## STANDING VOTES.

1. Communications of which notice has been given to either of the Secretaries shall take precedence of those not so notified.
2. Fellows may take from the Library six volumes at any one time, and may retain them for three months, and no longer. Upon special application, and for adequate reasons assigned, the Librarian may permit a larger number of volumes, not exceeding twelve, to be drawn from the Library for a limited period.
3. Works published in numbers, when unbound, shall not be taken from the Hall of the Academy without the leave of the Librarian.
4. The Council, under such rules respecting nominations as it may prescribe, may elect as Associates of the Academy a limited number of men of mark in affairs or of distinguished service in the community.  
Associates shall be entitled to the same privileges as Fellows, but shall not have the right to vote.  
The admission fee and annual dues of Associates shall be the same as those of Fellows residing within fifty miles of Boston.
5. Communications offered for publication in the Proceedings or Memoirs of the Academy shall not be accepted for publication before the author shall have informed the Committee on Meetings of his readiness, either himself or through some agent, to use such time as the Committee may assign him at such meeting as may be convenient both to him and to the Committee, for the purpose of presenting to the Academy a general statement of the nature and significance of the results contained in his communication.

## RUMFORD PREMIUM.

In conformity with the terms of the gift of Sir Benjamin Thompson, Count Rumford, of a certain Fund to the American Academy of Arts and Sciences, and with a decree of the Supreme Judicial Court of Massachusetts for carrying into effect the general charitable intent and purpose of Count Rumford, as expressed in his letter of gift, the Academy is empowered to make from the income of the Rumford Fund, as it now exists, at any Annual Meeting, an award of a gold and a silver medal, being together of the intrinsic value of three hundred dollars, as a Premium to the author of any important discovery or useful improvement in light or heat, which shall have been made and published by printing, or in any way made known to the public, in any part of the continent of America, or any of the American islands; preference always being given to such discoveries as, in the opinion of the Academy, shall tend most to promote the good of mankind; and, if the Academy sees fit, to add to such medals, as a further Premium for such discovery and improvement, a sum of money not exceeding three hundred dollars.



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